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## MEASUREMENT OF SOIL MOISTURE TRENDS WITH AIRBORNE SCATTEROMETERS

By

Bruce J. Blanchard

Remote Sensing Center  
Texas A&M University  
College Station, Texas 77843

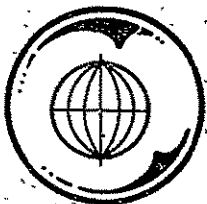
Progress Report for Period  
June 1, 1979 - January 1, 1980

Prepared for

Goddard Space Flight Center  
Greenbelt, Maryland 20771

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**TEXAS A&M UNIVERSITY**  
**REMOTE SENSING CENTER**  
COLLEGE STATION, TEXAS



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## 1.0 INTRODUCTION

The long term effort funded under this grant requires the collection and processing of an extensive set of data with ground crews, aircraft systems and the Seasat (SAR) synthetic aperture radar system in an attempt to develop a soil moisture estimation technique. The project is in

collaboration with technical personnel from the University of California

at Santa Barbara and the Goddard Space Flight Center. In the previous year data collection was accomplished during a period of three weeks in late July and early August at a site near Guymon, Oklahoma. Another data set consisting of ground samples and Seasat SAR data was collected in October 1978 near Sublett, Kansas, for another experiment; however, it is also available for this investigation.

This reporting period covers efforts to process aircraft sensor data, calibrate some of the data and validate the quality of the data. In addition, some preliminary graphical analysis of the data will be presented. Ground data sampling and validation of these data were completed under a separate contract and are reported in Remote Sensing Center Final Report No. 3829 dated April 1, 1979. A detailed description of the site and field locations is available in that report and therefore will not be repeated here.

### Aircraft Data

Data collected with the eleven channel multispectral scanner in the NASA C130 aircraft were not all available from NASA due to the lack of funds for preprocessing. A selection was made of five data channels from the total of eleven in order to reduce preprocessing costs. In addition data time frames over critical fields were selected to reduce the data

volume, thus data for the complete flight lines were not available for this sensor.

Channel eleven or the thermal data was first used to produce a grey scale mapping of the selected sample fields. At the time it was believed that the grey scale map could be used both to identify the scanner data within each field and to establish the time over each site for other sensors. It was found that time selection from these maps was not entirely suitable for the scatterometer system.

Field boundaries were determined from the grey scale maps and data was extracted for each of the five bands available. No sample fields were missed by the aircraft; therefore an average return for all five channels and for six days at three day intervals were available. After the initial averaging of digital data elements from each sample field was completed it was found that the raw data contained no sky reference. Normalization for sequential passes over a constant target requires some reference to the incoming radiation that would normally be available from the sky reference. Since the aircraft crossed a highway common to each pass, the average return from that target was calculated for each pass. The field data was then normalized to a constant return from the highway. During the processing data from channel nine was found to be erratic. Efforts to define the cause were not successful and that data cannot be used in further analysis.

Scatterometer data from four frequencies were available in the analog form; however, only the 13.3 GHz VV, 1.6 GHz HH and HV, and the .4 GHz HH and HV channels were digitally processed. These data were processed in concert with the development of the digital processing

technique by personnel from Texas A&M University Remote Sensing Center and the NASA/Johnson Space Center. The processing technique is new and in some instances there are serious questions as to the source of obvious errors. For this reason all returns over bare ground fields that remain dry throughout the six aircraft flight days were used as an indicator of the stability of the radar system.

Graphical illustrations were prepared where the scattering coefficient was plotted as a function of look angle to determine the relative difference in return on a specific flight to flight basis (Figure 1). Using only the data from relatively dry bare fields a thorough study was made of these graphs to determine which data were reasonable. Little deviation on a day to day basis was found in the 13.3 GHz data. On the east to west flight lines, however, the scattering coefficient is higher on the August 8 flight date and lower on the August 11 flight date. The majority of the 1.6 GHz data had a range as great as 7db at some look angles over the bare ground fields. In these data it was also evident that on the third flight, August 8, the scattering coefficient tends to be high while on the following flight, August 11, the coefficient tends to be too low. No rational explanation of this behavior could be found. The graphs of scattering coefficients from the .4 GHz system range as much as 10db for most look angles but have no pattern that would indicate high or low values for any particular flight day.

These data were all used to generate line plots for selected look angles as part of the processing technique. The line plots were then used to determine if field selection was correct when using time frames

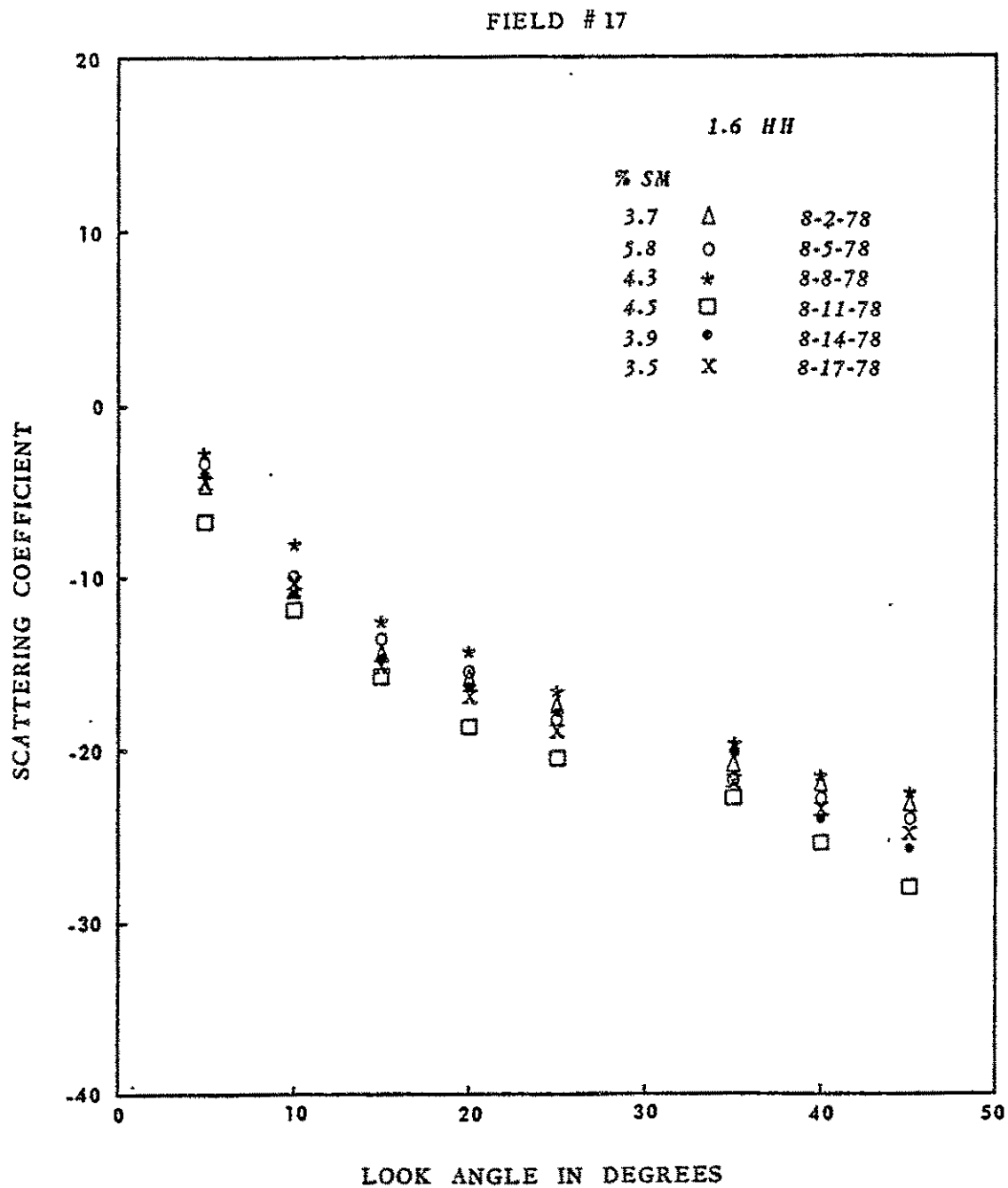


Figure 1. Illustration of the variation in return from a field that remains relatively dry during six (6) flights or a period of fifteen (15) days.



derived from the thermal band image of the multispectral scanner. A revision of all time frames was necessary with the final time frame being derived from the line plots when correlated to maps of the field conditions along the flight line. No explanation for the discrepancy between the scatterometer time and the imager time could be made.

The graphical illustrations also indicate that for times when the aircraft drift or roll exceeds  $3.5^{\circ}$  the data is not valid. In some instances where drift was greater than  $3.5^{\circ}$  but roll was smaller, the far-look angles do not represent the sample field. In other instances when the  $3.5^{\circ}$  limit is exceeded, the calculated value of the scattering coefficient is unreasonable due to limitations imposed by the area calculations in the processing program. A screening procedure was developed to eliminate or flag the data elements that could not be considered valid.

After the intensive investigation of the data quality from the scatterometers, the decision was made that data from the C band scatterometer would not be processed. This decision was based on the fact that much of the problem in the digital processing of scatterometer return stems from poor antenna pattern definition. Irregularities in the pattern may or may not be real when the aircraft experiences pitch or roll. There is the chance of processing data from regions of the antenna pattern that are irregular even when care has been taken to avoid such regions in the initial selection of look angles. The available antenna pattern for the C band scatterometer has numerous irregularities and needs further study prior to investment of excessive processing costs on the

data that may be invalid.

Passive microwave data were available for both the C band and L band systems of the multifrequency microwave radiometer. These data were processed at the NASA Goddard Space Flight Center. Data quality screening was done after delivery to the investigator. All data from the C band system appears to be valid while only the horizontal polarization channel of the L band system is valid. Loss of the L band vertical polarized data was attributed to antenna problems at the time the data was collected. To avoid inclusion of invalid data due to drift of the aircraft, the same limitations with respect to roll and drift of the aircraft that had been applied to scatterometer data were used as selection criteria.

A summary of all aircraft data is presented in Appendix A. These data are indexed to the flight days, flight lines, runs and sample fields. The values considered invalid data have been omitted to avoid inadvertent use. No measure of the confidence that printed data is accurate can be made at this time.

#### Seasat Data

A single orbit of the Seasat radar passed over the Guymon site during this experiment. Five passes were available over the Kansas site during the time sampling was in progress. These data have been processed both digitally and optically by JPL. Initial digital processing of the data was done without close cooperation with the investigators. It was determined that since the digital processing scheme used required changes in processing parameters that these data would be reprocessed in their

entirety. Likewise there was considerable problem in the optically processed data because adjustments of the optical processor varied from scene to scene. An attempt has been made since the initial processing to develop a calibration scheme for the optically processed data. After the development of this scheme all of the passes for Seasat over the soil moisture experiment areas have been reprocessed.

The digital data were used to develop an estimate of the distribution of antenna power across the image. This was accomplished by averaging values along track throughout the scene and then plotting those values as a function of distance across the scene. It was found that the test sites varied in their location within the scene and therefore within the antenna power beam. A scheme was devised to normalize the power differences due to the location of the beam. This does not in any way account for the differences in power due to setting of the gain on the orbiting system. Corrections for differences in gain would necessarily have to be derived from the optical data since the system tapes associated with the signal tapes are not processed simultaneously with the digital processing of the data.

A correction for system parameters was attempted from the final version of the optically correlated data. This calibration scheme is not thoroughly checked out at the time this report is being written.

A cursory examination of the Seasat images indicates that there is a sensitivity to changes in soil moisture. At the present time no quantitative measure of this change in scattering coefficient can be

made. Images from two locations where rain storms have passed across an area have been examined and compared with meteorological data from the same areas. It has been found that recent rainfall increases the return in the scattering coefficient a significant amount. These data have been submitted to NASA Goddard Space Flight Center for their use. A preliminary examination of the data associated with the sample sites does not yet indicate whether or not a quantitative measure of soil moisture can be determined from the Seasat radar. It appears that significant contributions to the signal are made by changes in roughness values thus there may be considerable difficulty in quantitatively estimating soil moisture on a field by field basis with this system.

## 2.0 GRAPHICAL ANALYSIS

Plots were generated for each channel of aircraft scatterometer data as a function of soil moisture. Ground data was separated into categories of land use; i.e., bare ground, milo and alfalfa. Aircraft data from all dates were used in the initial analysis. Incorporation of data from the August 8 and 11 flights proved to be confusing. Deletion of these dates where there was suspicion of instrument problems has improved the opportunity to detect differences in sensor response due to surface roughness, crop cover and soil moisture.

A cursory examination of the graphs indicate that rows in fields that are listed perpendicular to the 1.6 GHz HH radar look angle produce approximately 12.5db greater return than parallel cultivation (Figures 2, 3 and 4). No significant difference in return can be detected at or near a 20° look angle when milo fields with tillage parallel to the flight line were compared to flat tilled bare ground fields. For the same fields with look angles at or near 5° the vegetated milo fields produced a lower return, approximately 6db, than the flat tilled bare ground. At a look angle of 40° off nadir the return from the vegetated fields was approximately 5db greater than from flat tilled bare ground.

Examination of the 1.6 GHz cross polarized data for the same fields indicates that there is no sensitivity to soil moisture at the 5° look angle (Figures 5, 6 and 7). There is also no sensitivity to row direction or discrimination between vegetated row tillage and flat tilled bare ground at this deep angle. At larger angles off

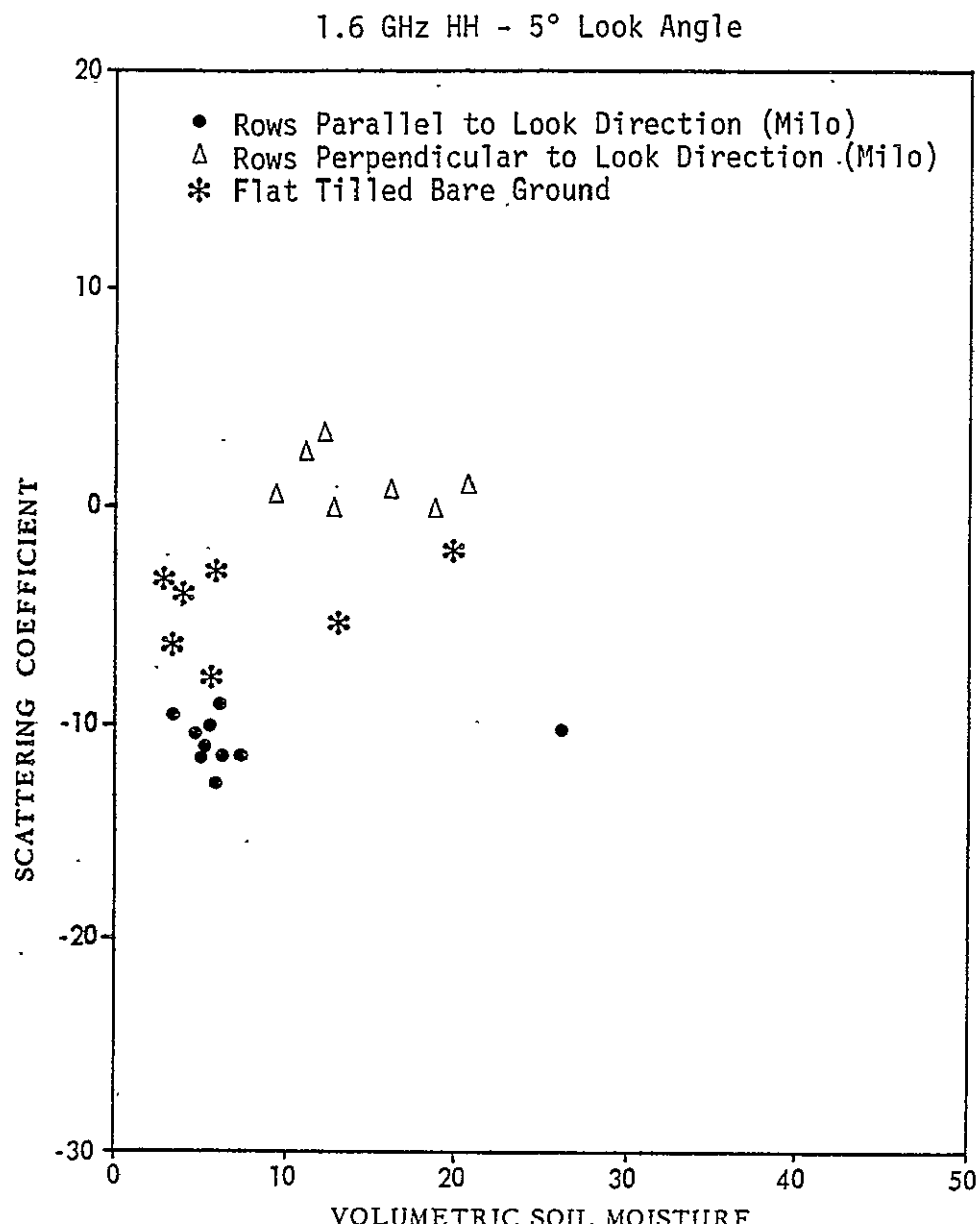


Figure 2, Change in scatterometer return using the L band, 1.6 GHz like polarization system at a look angle of 5° over fields with different tillage practices.



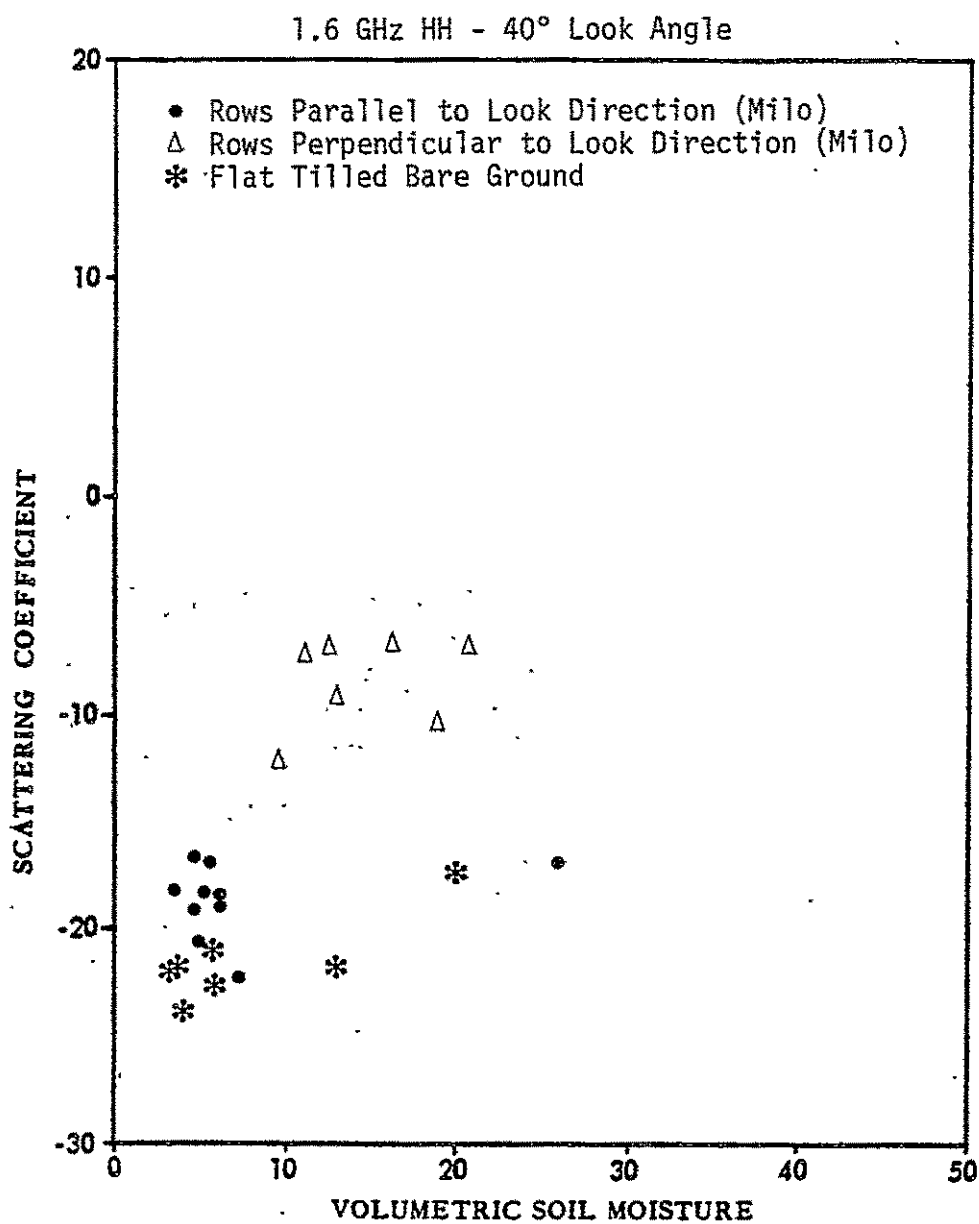


Figure 4. Change in scatterometer return using the L band, 1.6 GHz like polarization system at a look angle of 40° over fields with different tillage practices.



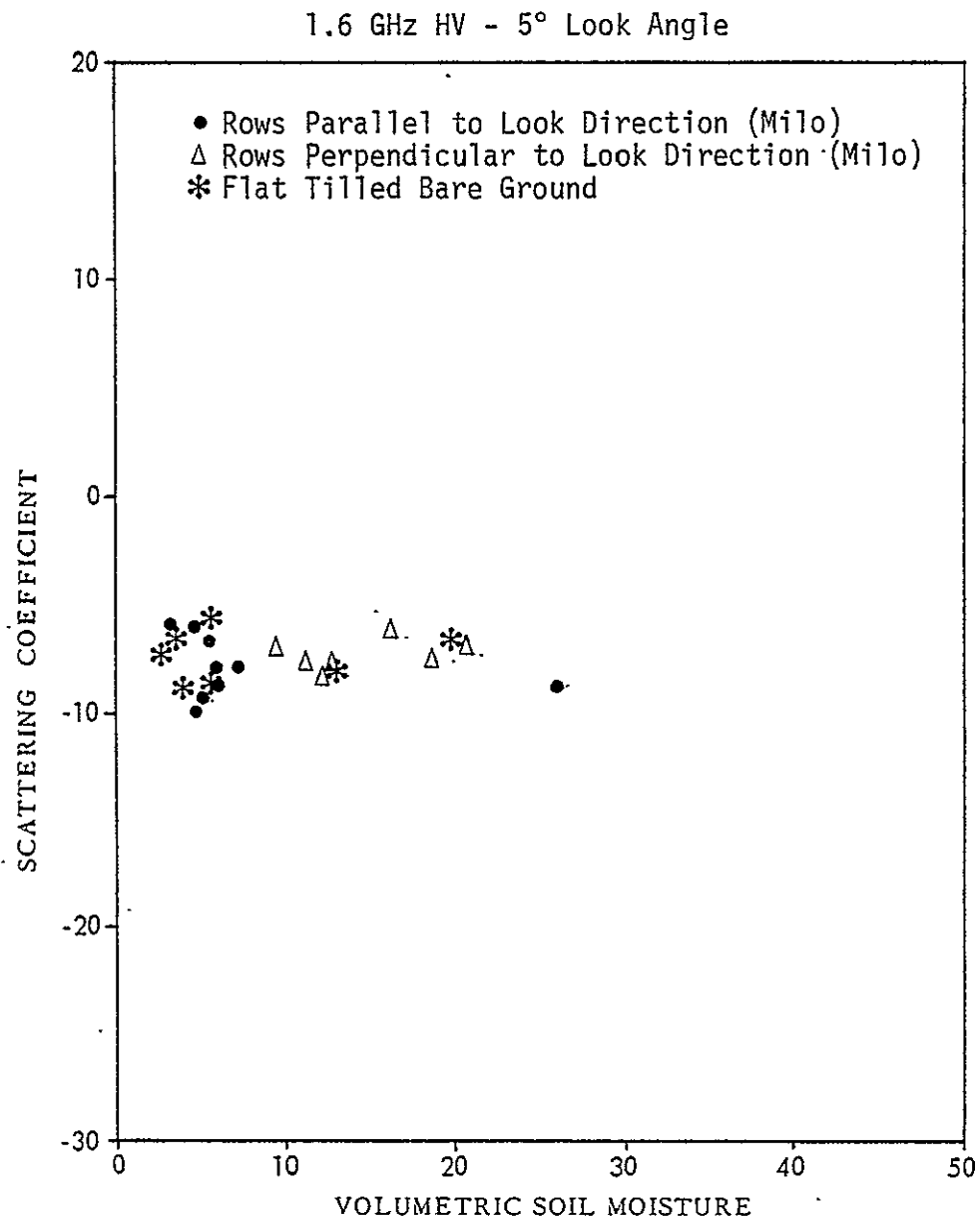


Figure 5. Change in scatterometer return using the L band, 1.6 GHz cross polarization system at a look angle of 5° over fields with different tillage practices.

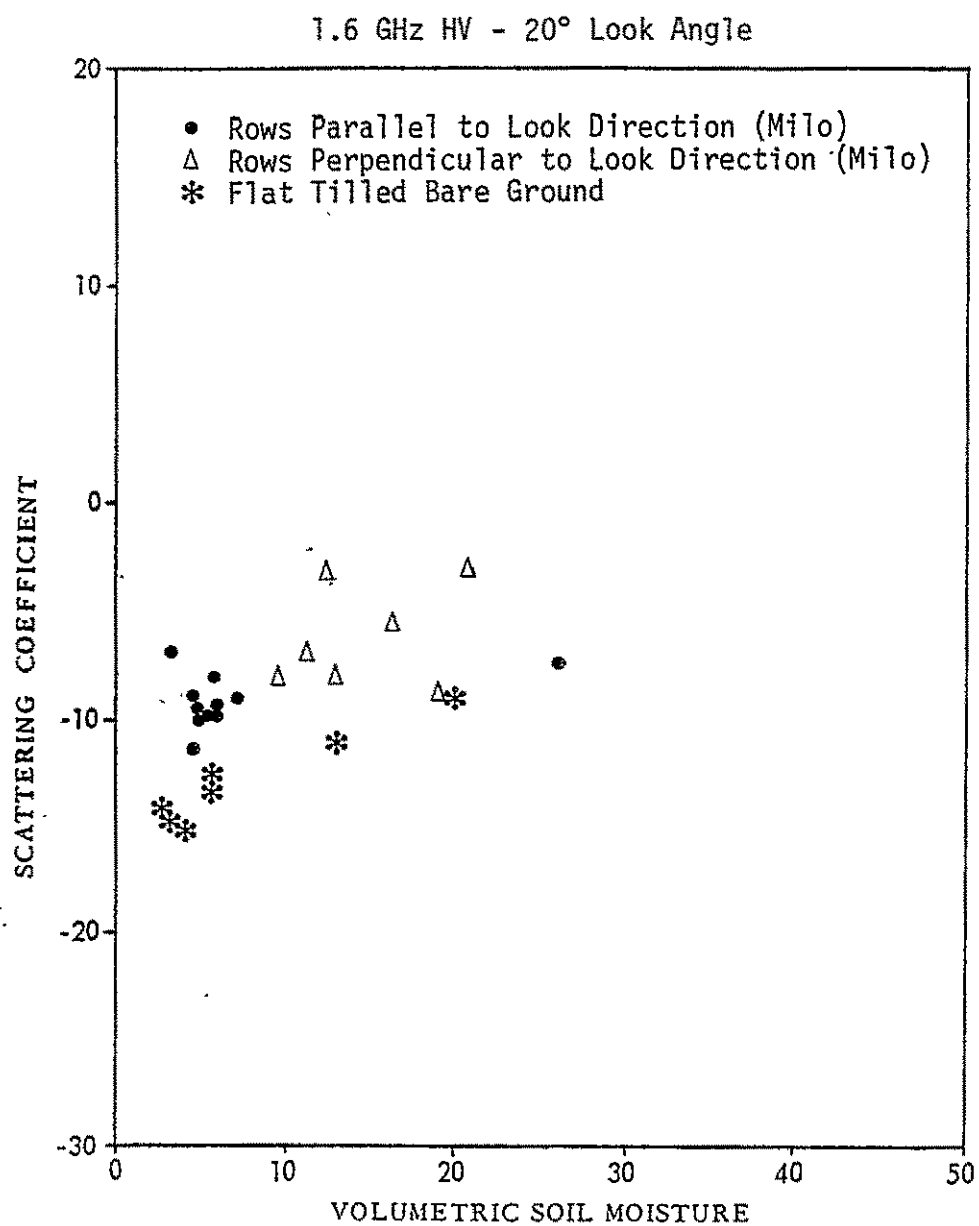


Figure 6. Change in scatterometer return using the L band, 1.6 GHz cross polarization system at a look angle of 20° over fields with different tillage practices.

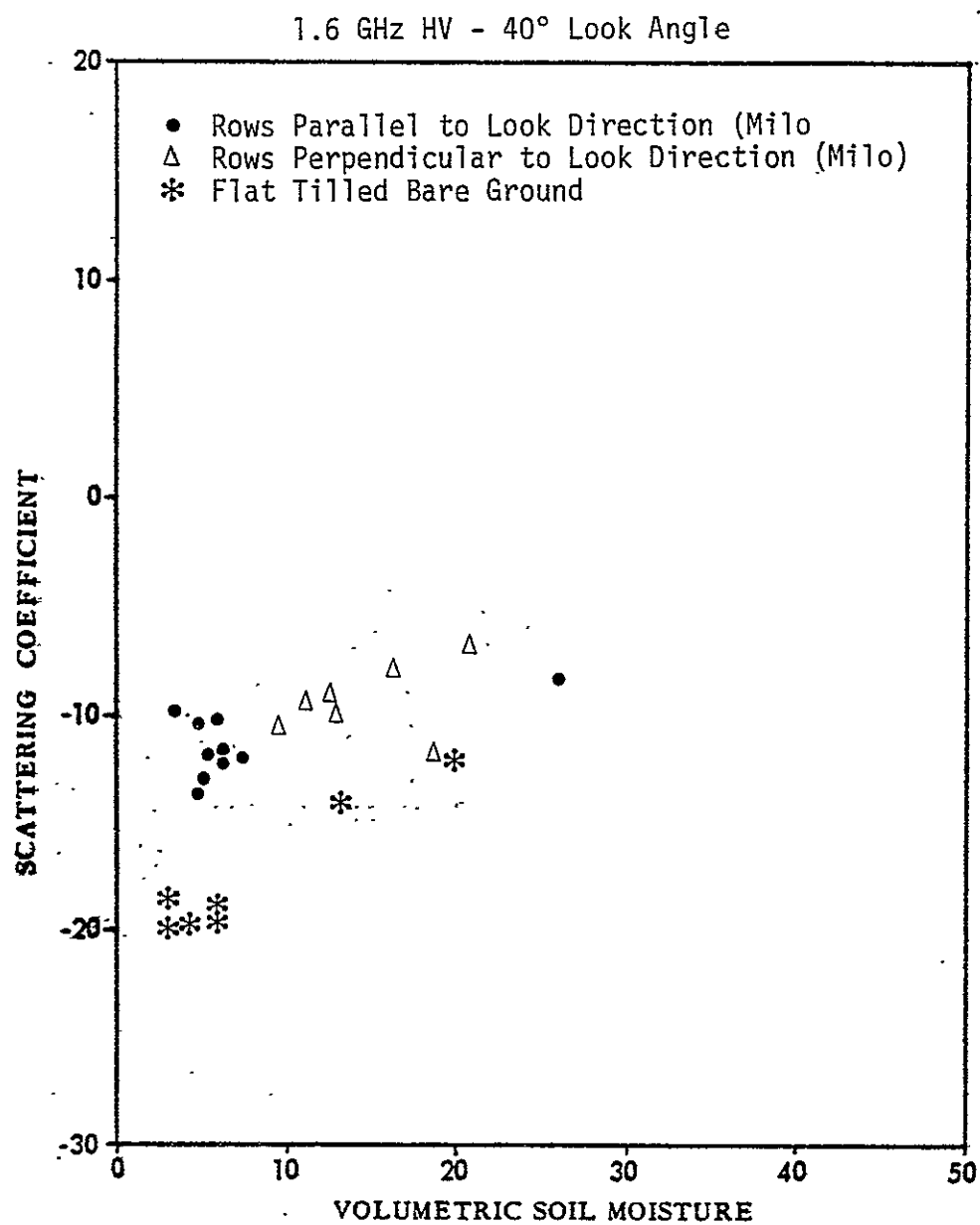


Figure 7. Change in scatterometer return using the L band, 1.6 GHz cross polarization system at a look angle of 40° over fields with different tillage practices.

full range of soil moisture, 0 to 35 percent volumetric, would account for a 9 to 10db range of the scattering coefficient. There is however a shift in return of approximately 5db between the vegetated and bare ground fields.

### 3.0 CONCLUSIONS AND DISCUSSION

Recognition should be made of the extensive time and cost that has been expended on the processing and validation of these data. At the same time it should be noted that remaining data published in the appendix should be used with caution since much of the selection process was subjective. There is little likelihood that extensive analysis of these data by persons not at the field location at the time the data were collected would be valid. It has also become apparent that data collected in the past where isolated flights were conducted may be invalid due to sensor performance or the inability of the investigator to validate the ground data.

The cursory examination of graphical illustrations of the data have pointed out several items that are significant. First the return from the listed row tillage practices at  $90^\circ$  to the radar beam is approximately 12.5db higher than other comparable agricultural land. The Seasat radar data shows evidence that the high return occurs only at a narrow range in look direction near the  $90^\circ$ . Such a high increase in return compared to a 15db range in film response would indicate that rows seen crosswise would saturate optically processed data. This response to row direction will have an adverse affect on monitoring agricultural lands with L band radar systems.

Secondly, the preliminary examination indicates there is no sensitivity to soil moisture at the  $5^\circ$  look angle when using a like polarized L band system. Some sensitivity was evident at a look angle of  $20^\circ$  and only a weak sensitivity was indicated at  $40^\circ$  look angle.

Third, and possibly most significant, is the observation that at both  $20^\circ$  and  $40^\circ$  look angles there is a significant response to soil moisture and none to row direction. This finding agrees with some of the theories that have been developed in the past. There is some indication that these data may be the first that have been collected where isolation of the cross polarized component of the L band returns has been valid. Steep angles or the  $5^\circ$  look angle using cross polarized (HB) L band system appears insensitive to row direction and soil moisture.

## APPENDIX A

MULTISPECTRAL SCANNER AND MFMR DATA  
AUGUST 2, 1978

LOCATION			MMS CHANNEL				PASSIVE MICROWAVE		
LINE	RUN	FLD	4	7	8	11	C(H)	C(V)	L(H)*
1	1	2	26.85	31.87	36.72	26.87	289.17	289.23	279.60
1	1	4	23.57	20.69	47.62	21.59	272.41	272.59	255.14
1	1	6	31.93	39.02	44.90	27.01	284.26	287.86	278.06
1	1	7	36.02	39.75	52.49	25.30	281.63	281.31	280.31
1	1	8	26.55	27.41	42.16	25.51	284.81	284.97	280.63
1	1	1A	25.29	24.83	43.58	24.49	285.65	285.79	282.98
1	1	2X	31.10	36.28	41.56	26.65	286.20	285.57	278.75
1	1	1X	22.99	20.48	41.48	22.96	281.48	283.18	268.55
3	1	1X	**				280.50	280.86	268.06
3	1	19	22.79	23.97	45.02	24.19	267.99	270.92	245.34
3	1	20	22.31	20.88	43.53	23.30	248.28	248.61	223.10
3	1	21	22.91	27.83	38.66	22.92	266.38	267.68	234.77
3	1	22	23.42	22.06	54.20	22.75	264.26	264.90	235.81
2	1	10	34.11	39.73	48.48	28.37	289.57	291.04	282.95
2	1	13	25.13	23.34	48.69	23.71	286.02	287.84	266.91
2	1	14	30.78	37.43	46.14	22.69	246.34	246.62	236.37
2	1	15	41.46	44.63	61.83	27.26	283.29	282.70	281.40
2	1	17	34.46	41.59	51.10	29.46	289.96	292.09	284.23
2	1	2A	28.86	31.26	45.09	26.89	284.19	283.53	276.25
2	1	2X	32.42	37.12	45.33	28.73	283.89	286.59	279.47
2	1	1X	24.15	20.44	47.45	23.26	281.18	282.99	269.63
4	1	2X					283.95	286.49	277.75
4	1	24	22.50	22.68	39.17	25.08	271.07	273.59	254.53
4	1	25	24.59	22.74	49.28	23.47	259.41	261.97	237.31
4	1	26	25.11	29.98	38.72	23.99	271.16	272.82	239.49
4	1	27	26.64	25.17	52.85	23.29	254.72	255.36	225.72

\* L(H) DATA IS RUN 2

\*\* UNAVAILABLE MMS DATA

\*\*\* MISSING MFMR DATA DELETED DUE TO EXCESSIVE ROLL AND DRIFT

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MULTISPECTRAL SCANNER AND MFMR DATA  
AUGUST 5, 1978

LOCATION			MMS CHANNEL				PASSIVE MICROWAVE		
LINE	RUN	FLD	4	7	8	11	C(H)	C(V)	L(H) *
1	1	2	29.83	35.64	42.38	23.52	264.03	264.50	255.79
1	1	4	23.76	20.26	47.98	22.09	270.70	271.14	248.61
1	1	6	33.28	41.00	48.33	23.13	266.77	266.74	254.46
1	1	7	31.67	34.59	47.69	22.92	260.89	258.42	252.41
1	1	8	26.80	27.75	43.21	23.59	272.89	272.44	265.83
1	1	1A	25.31	24.40	43.52	24.46	281.39	281.28	285.54
1	1	2X	30.65	35.32	41.61	26.25	278.84	278.97	278.69
1	1	1X	24.28	21.26	43.33	21.97	268.15	270.11	258.35
3	1	1X	**				273.71	273.73	274.06
3	1	19	24.04	24.37	47.79	26.44	270.03	272.30	267.16
3	1	20	23.62	22.05	51.14	24.38	264.11	264.69	257.37
3	1	21	26.05	31.30	43.46	29.26	282.43	281.92	279.72
3	1	22	24.97	22.50	58.78	24.27	264.17	265.75	236.52
2	1	10	34.62	41.28	53.93	23.96	249.90	250.90	244.79
2	1	13	23.66	21.35	50.06	23.10	264.04	266.13	252.03
2	1	14	31.74	38.52	50.51	23.13	228.58	229.24	230.11
2	1	15	33.64	36.24	55.66	24.11	260.95	258.24	252.31
2	1	17	31.33	37.94	49.81	28.86	286.11	286.20	280.24
2	1	2A	26.71	28.29	45.17	26.24	276.75	277.06	272.88
2	1	2X	29.83	33.95	44.40	27.82	277.36	279.09	279.64
2	1	1X	23.42	20.32	49.11	23.02	277.00	278.97	272.60
4	1	2X					279.74	280.98	275.19
4	1	24	23.35	22.87	39.88	26.76	270.76	274.35	262.89
4	1	25	25.25	22.52	48.96	24.35	253.53	254.80	240.18
4	1	26	28.01	32.57	42.15	30.04	282.46	282.61	279.78
4	1	27	25.43	23.10	48.46	24.38	274.04	274.47	246.33

\* L(H) DATA IS RUN 2

\*\* UNAVAILABLE MMS DATA

\*\*\* MISSING MFMR DATA DELETED DUE TO EXCESSIVE ROLL AND DRIFT

MULTISPECTRAL SCANNER AND MFMR DATA  
AUGUST 8, 1978

LOCATION			MMS CHANNEL				PASSIVE MICROWAVE		
LINE	RUN	FLD	4	7	8	11	C(H)	C(V)	L(H)*
1	1	2	28.98	32.13	44.74	24.50	232.73	232.06	
1	1	4	27.47	26.25	52.83	24.20	274.54	275.82	254.96
1	1	6	33.21	37.45	51.85	26.13	274.48	274.89	
1	1	7	31.45	33.18	50.21	25.20	259.21	257.46	
1	1	8	28.58	29.52	47.59	25.41	272.32	272.58	270.27
1	1	1A	27.72	28.17	48.26	25.73	282.74	283.80	282.00
1	1	2X	27.85	30.43	43.28	23.99	257.01	255.50	243.93
1	1	1X	26.75	26.21	47.14	24.06	266.57	266.64	244.05
3	1	1X	**				270.30	268.52	256.73
3	1	19	26.72	27.86	44.42	25.10	270.36	271.00	260.00
3	1	20	26.52	27.26	45.96	24.49	255.62	257.83	243.71
3	1	21	27.39	31.40	43.33	26.59	281.45	282.22	276.25
3	1	22	27.06	27.44	50.14	24.41	269.18	270.06	239.28
2	1	10	35.76	40.92	43.59	25.83	225.73	226.20	211.09
2	1	13	29.74	28.06	45.33	25.30	270.91	272.92	254.25
2	1	14	36.80	42.06	45.38	26.70	270.57	271.29	263.87
2	1	15	32.74	34.54	41.50	25.91	243.82	243.70	241.89
2	1	17	33.57	38.15	57.36	27.12			276.24
2	1	2A	30.25	31.73	53.51	27.24	268.24	265.53	
2	1	2X	30.68	33.75	52.44	26.07	257.35	256.95	249.65
2	1	1X	28.40	27.34	56.06	25.99			255.23
4	1	2X					257.56	258.15	249.93
4	1	24	27.01	27.69	43.07	26.15	273.81	275.67	263.16
4	1	25	27.72	27.70	45.64	25.42	274.51	274.28	266.98
4	1	26	29.08	33.03	43.02	27.78			275.94
4	1	27	28.86	27.86	46.70	25.17	268.37	268.75	247.74

\* L(H) DATA IS RUN 2

\*\* UNAVAILABLE MMS DATA

\*\*\* MISSING MFMR DATA DELETED DUE TO EXCESSIVE ROLL AND DRIFT

MULTISPECTRAL SCANNER AND MFMR DATA  
AUGUST 11, 1978

LOCATION			MMS CHANNEL				PASSIVE MICROWAVE		
LINE	RUN	FLD	4	7	8	11	C(H)	C(V)	L(H) *
1	1	2	32.92	39.94	52.12	27.30	288.72	289.96	287.95
1	1	4	17.94	14.89	47.56	20.51	292.63	293.44	***
1	1	6	34.85	42.96	55.96	27.42			
1	1	7	27.86	29.79	47.84	20.15	254.30	252.69	
1	1	8	25.19	26.28	46.49	24.69			287.35
1	1	1A	22.41	21.95	44.87	23.79	294.24	295.46	
1	1	2X	31.30	36.77	47.45	27.61			288.26
1	1	1X	19.54	16.45	42.40	20.03	289.68	289.49	279.48
3	1	1X	**						287.82
3	1	19	22.29	22.19	48.25	21.99			279.31
3	1	20	21.02	18.86	50.19	19.96	270.42	273.41	260.17
3	1	21	26.83	33.06	46.07	28.86	297.53	299.37	289.40
3	1	22	21.18	17.55	61.56	18.74			
2	1	10	43.88	52.58	73.33	27.99	286.15	288.63	290.90
2	1	13	21.16	18.64	56.56	21.59	290.28	291.87	282.34
2	1	14	39.48	48.34	69.52	27.77	288.37	289.55	304.05
2	1	15	33.40	35.72	61.20	23.51	274.35	275.01	270.11
2	1	17	33.22	41.26	57.75	30.49	297.89	299.82	308.61
2	1	2A	25.60	27.09	49.33	24.92	285.40	286.12	
2	1	2X	32.47	38.20	53.15	29.30			
2	1	1X	21.14	17.84	49.80	22.04	293.00	296.49	284.77
4	1	2X					293.72	295.55	291.03
4	1	24	24.27	23.46	45.87	23.99			
4	1	25	24.18	21.51	51.17	21.31			267.54
4	1	26	29.51	35.56	45.96	30.76	298.20	298.93	
4	1	27	23.34	18.94	58.73	20.03			

\* L(H) DATA IS RUN 2

\*\* UNAVAILABLE MMS DATA

\*\*\* MISSING MFMR DATA DELETED DUE TO EXCESSIVE ROLL AND DRIFT

MULTISPECTRAL SCANNER AND MFMR DATA  
AUGUST 14, 1978

LOCATION			MMS CHANNEL				PASSIVE MICROWAVE		
LINE	RUN	FLD	4	7	8	11	C(H)	C(V)	L(H)*
1	1	2	33.39	39.73	51.52	26.64	285.37	287.61	281.71
1	1	4	22.74	19.46	52.90	22.89	274.48	277.71	***
1	1	6	30.01	36.27	47.39	22.54	240.01	241.05	240.32
1	1	7	29.73	30.62	49.38	25.13	284.99	284.92	281.55
1	1	8	**				289.34	290.36	285.66
1	1	1A	23.82	22.77	45.65	25.53	292.55	293.00	290.29
1	1	2X	31.62	36.56	47.77	27.49	291.34	293.86	285.59
1	1	1X	22.57	19.16	46.08	24.37	289.83	292.50	287.59
3	1	1X	22.01	21.10	34.58	24.94			286.64
3	1	19	24.50	24.76	38.84	25.31	284.52	287.35	278.28
3	1	20	24.54	23.63	51.73	25.29	284.55	287.15	278.11
3	1	21	28.32	33.05	48.72	28.58	294.83	296.36	284.77
3	1	22	26.55	23.29	65.71	23.81	282.47	284.25	262.46
2	1	10	40.83	47.98	56.60	28.06	283.54	286.21	275.36
2	1	13	22.34	19.92	45.56	25.18			283.32
2	1	14	34.08	39.87	55.69	27.96			280.01
2	1	15	30.21	30.85	52.81	25.99	284.68	285.25	266.95
2	1	17	29.55	34.98	47.04	28.98	296.17	296.99	283.25
2	1	2A	26.51	27.04	49.38	27.21	290.38	290.30	284.66
2	1	2X	32.83	37.69	53.44	29.34	290.47	292.71	286.07
2	1	1X	24.63	21.80	55.70	26.41	293.32	293.97	286.07
4	1	2X	33.05	37.62	53.31	29.19	292.20	293.78	284.96
4	1	24	24.32	23.38	44.09	26.02	286.48	289.16	280.01
4	1	25	23.74	21.48	49.85	24.38	264.06	267.68	255.53
4	1	26	27.58	32.26	44.95	29.33	296.47	297.81	286.97
4	1	27	24.57	20.26	62.72	23.57	287.68	289.32	263.30

\* L(H) DATA IS RUN 2

\*\* UNAVAILABLE MMS DATA

\*\*\* MISSING MFMR DATA DELETED DUE TO EXCESSIVE ROLL AND DRIFT

MULTISPECTRAL SCANNER AND MFMR DATA  
AUGUST 17, 1978

LOCATION			MMS CHANNEL				PASSIVE MICROWAVE		
LINE	RUN	FLD	4	7	8	11	C(H)	C(V)	L(H)*
1	1	2	32.01	37.79	52.84	27.78	284.08	285.25	285.58
1	1	4	20.54	17.85	51.55	23.27	288.66	291.12	274.22
1	1	6	33.45	40.20	56.36	26.77	285.42	286.51	290.15
1	1	7	29.09	29.89	53.83	25.74	283.97	284.72	290.13
1	1	8	24.01	24.48	46.09	26.25	281.14	280.83	287.50
1	1	1A	22.05	21.34	45.20	25.61	290.07	291.57	294.08
1	1	2X	22.12	25.39	34.90	28.51	290.53	293.90	289.47
1	1	1X	20.46	18.26	43.85	23.80	289.06	290.40	288.76
3	1	1X	21.88	17.76	39.25	21.76	278.11	276.93	289.28
3	1	19	22.63	20.44	37.14	22.72	283.29	285.99	283.18
3	1	20	21.04	17.58	37.27	20.65	264.87	266.04	261.75
3	1	21	24.24	26.08	32.22	26.66	291.71	292.94	
3	1	22	25.58	23.24	42.69	23.43	***		
2	1	10	44.87	52.51	64.33	28.22	283.26	286.24	284.36
2	1	13	24.17	21.13	53.51	22.17	279.36	280.17	265.02
2	1	14	40.68	48.23	62.10	27.84	285.81	287.52	286.33
2	1	15	36.26	37.36	59.30	26.20	285.29	286.63	289.21
2	1	17	34.45	41.74	51.37	29.65	293.86	294.27	290.68
2	1	2A	27.18	27.32	46.29	25.48	285.19	286.63	289.26
2	1	2X	25.15	28.93	35.22	29.07	292.24	295.32	287.36
2	1	1X	24.02	21.28	46.34	24.07	281.21	283.92	274.95
4	1	2X	21.77	27.02	42.28	34.67	293.03	294.13	290.33
4	1	24	22.42	23.37	54.12	29.73	283.78	287.00	284.51
4	1	25	22.41	22.18	59.35	27.87	285.13	287.25	335.94
4	1	26	25.18	32.10	50.34	35.53	292.03	293.76	291.19
4	1	27	26.28	27.24	65.48	31.49	288.25	290.13	278.35

\* L(H) DATA IS RUN 2

\*\* UNAVAILABLE MMS DATA

\*\*\* MISSING MFMR DATA DELETED DUE TO EXCESSIVE ROLL AND DRIFT

VOLUMETRIC SOIL MOISTURE FOR THE MULTISPECTRAL SCANNER  
AUGUST 2, 1978

LOCATION			DEPTH INCREMENT (CM)						
LINE	RUN	FLD	(0-2)	(2-5)	(5-9)	(9-15)	(0-15)	(15-30)	(30-45)
1	1	2	2.7	3.2	6.0	14.8	9.3	23.9	25.4
1	1	4	17.9	20.6	21.9	21.5	21.0	21.9	19.4
1	1	6	3.3	4.1	7.3	16.2	12.0	18.4	19.3
1	1	7	5.2	9.9	13.5	16.1	13.9	19.0	21.1
1	1	8	2.3	3.9	6.3	10.6	9.0	16.3	17.7
1	1	1A	6.1	9.6	13.1	19.4	15.6	23.1	23.7
2	1	10	2.2	2.7	6.8	14.4	9.6	21.3	19.3
2	1	13	15.9	18.9	20.9	20.1	19.6	20.8	17.9
2	1	14	22.1	22.9	25.0	25.5	24.5	26.0	22.8
2	1	15	6.2	11.0	14.1	15.9	14.6	19.9	22.7
2	1	17	3.7	4.6	6.5	11.7	10.8	22.2	23.5
2	1	2A	4.6	6.4	13.4	25.8	14.9	29.0	28.4
3	1	1X	24.9	24.9	29.4	32.8	31.3	33.0	32.2
3	1	19	11.1	15.8	20.0	22.0	17.9	27.0	28.0
3	1	20	27.6	24.6	28.0	33.8	25.6	30.5	31.1
3	1	21	14.9	9.1	7.5	11.4	13.5	21.1	23.0
3	1	22	21.5	24.0	24.9	22.7	23.1	22.9	20.1
4	1	2X	5.2	5.0	7.3	19.5	13.6	29.4	31.3
4	1	24	10.7	14.6	21.1	27.4	21.6	28.5	29.6
4	1	25	16.8	18.5	22.7	26.3	21.7	27.4	25.6
4	1	26	4.4	5.8	7.3	10.0	9.2	21.1	22.4
4	1	27	12.1	20.8	22.2	21.6	20.6	23.2	20.0

VOLUMETRIC SOIL MOISTURE FOR THE MULTISPECTRAL SCANNER  
AUGUST 5, 1978

LOCATION			DEPTH INCREMENT (CM)						
LINE	RUN	FLD	(0-2)	(2-5)	(5-9)	(9-15)	(0-15)	(15-30)	(30-45)
1	1	2	11.6	12.7	10.1	14.3	14.6	23.3	24.4
1	1	4	19.7	20.8	22.9	22.0	22.4	21.1	19.1
1	1	6	13.3	14.7	12.3	15.0	13.5	17.7	18.7
1	1	7	10.0	15.2	18.7	19.4	17.8	19.9	21.6
1	1	8	8.1	8.6	8.6	12.5	10.2	17.5	18.8
1	1	1A	6.0	9.1	13.9	21.4	15.5	23.7	23.7
2	1	10	10.2	11.4	10.6	15.6	13.2	20.5	19.0
2	1	13	32.2	31.6	31.6	29.2	30.2	24.2	19.1
2	1	14	20.9	21.3	23.1	24.5	23.0	26.5	23.3
2	1	15	11.4	15.3	17.4	18.7	17.7	19.9	22.9
2	1	17	5.8	5.8	8.0	13.5	10.5	22.5	23.9
2	1	2A	26.1	24.5	25.3	29.8	28.4	30.9	30.2
3	1	1X	24.0	24.5	28.9	34.7	29.9	33.4	31.8
3	1	19	14.8	20.4	21.8	23.1	21.9	26.9	28.6
3	1	20	24.3	26.4	27.7	34.6	29.2	30.9	30.2
3	1	21	6.0	6.7	7.7	11.8	8.4	20.7	22.7
3	1	22	21.7	24.9	25.0	23.5	22.9	23.9	22.2
4	1	2X	10.0	9.6	11.7	21.5	16.5	29.8	31.6
4	1	24	20.7	25.1	28.5	32.2	28.4	29.9	30.1
4	1	25	33.5	28.5	30.3	36.4	31.2	32.7	32.2
4	1	26	6.7	7.4	8.3	12.6	10.3	22.6	23.1
4	1	27	15.4	21.4	22.8	21.9	21.2	23.8	21.2

VOLUMETRIC SOIL MOISTURE FOR THE MULTISPECTRAL SCANNER  
AUGUST 8, 1978

LOCATION			DEPTH INCREMENT (CM)						
LINE	RUN	FLD	(0-2)	(2-5)	(5-9)	(9-15)	(0-15)	(15-30)	(30-45)
1	1	2	5.3	8.4	9.6	14.9	14.4	23.8	24.9
1	1	4	21.3	22.4	23.2	22.6	22.5	21.9	19.2
1	1	6	6.1	10.0	11.3	14.1	13.3	17.6	18.2
1	1	7	5.7	12.2	16.4	19.0	16.0	20.4	21.6
1	1	8	5.0	6.4	8.9	12.7	10.1	17.5	18.3
1	1	1A	5.5	7.8	13.0	20.7	14.7	23.3	24.6
2	1	10	4.7	8.4	10.2	16.0	12.6	20.5	19.2
2	1	13	26.6	28.4	28.4	27.3	27.6	24.3	18.7
2	1	14	10.9	16.3	18.5	21.8	18.5	25.1	23.2
2	1	15	21.8	23.4	24.5	24.7	23.6	23.0	24.3
2	1	17	4.3	5.4	7.7	13.7	10.7	23.3	23.8
2	1	2A	15.8	18.8	21.7	27.6	24.0	29.7	29.2
3	1	1X	15.9	18.0	23.4	30.9	25.5	30.8	30.4
3	1	19	16.3	22.4	23.4	25.1	23.0	26.3	28.7
3	1	20	33.0	28.6	29.5	32.4	30.8	30.6	29.4
3	1	21	5.3	5.6	6.4	9.5	7.9	20.9	27.5
3	1	22	21.6	24.0	24.4	23.4	24.3	24.9	23.3
4	1	2X	8.2	8.8	11.1	20.7	16.0	29.5	31.5
4	1	24	20.5	27.0	28.3	30.1	28.6	31.2	31.4
4	1	25	24.7	22.8	26.4	33.5	27.5	28.2	28.3
4	1	26	6.0	6.9	8.6	13.0	10.3	22.6	23.2
4	1	27	18.2	22.8	24.6	23.4	23.0	26.0	22.1



VOLUMETRIC SOIL MOISTURE FOR THE MULTISPECTRAL SCANNER  
AUGUST 11, 1978

LOCATION			DEPTH INCREMENT (CM)						
LINE	RUN	FLD	(0-2)	(2-5)	(5-9)	(9-15)	(0-15)	(15-30)	(30-45)
1	1	2	5.3	7.8	10.8	15.2	12.1	22.6	24.6
1	1	4	9.9	13.3	14.8	14.5	14.0	18.3	17.8
1	1	6	3.8	7.0	10.9	15.4	11.2	17.0	17.8
1	1	7	18.8	22.3	23.2	23.9	22.5	21.1	22.2
1	1	8	8.5	9.5	11.0	14.2	14.1	19.6	20.3
1	1	1A	4.9	7.1	11.7	18.5	14.8	22.1	22.2
2	1	10	5.7	8.1	12.2	16.7	12.1	20.7	18.8
2	1	13	13.4	18.0	19.3	19.0	18.5	21.6	18.4
2	1	14	5.4	12.9	16.6	20.3	15.9	24.0	22.3
2	1	15	17.5	21.0	23.0	23.4	22.4	21.6	22.1
2	1	17	4.5	5.2	6.9	13.4	10.8	23.0	24.2
2	1	2A	9.9	15.7	19.8	27.0	20.5	28.5	28.0
3	1	1X	11.0	13.7	20.1	27.1	21.2	27.7	27.7
3	1	19	10.1	15.6	19.9	22.6	21.3	26.0	27.1
3	1	20	26.0	25.1	28.7	32.0	25.7	29.5	28.7
3	1	21	4.0	5.8	7.4	9.9	7.1	20.8	25.4
3	1	22	19.6	24.1	24.4	22.6	21.6	24.1	22.6
4	1	2X	6.6	7.6	10.3	21.2	15.4	29.5	31.3
4	1	24	11.7	19.3	22.4	25.5	22.6	27.9	29.1
4	1	25	21.1	22.3	25.9	32.7	25.4	28.1	28.1
4	1	26	4.6	6.4	9.1	13.8	10.6	21.9	22.9
4	1	27	19.3	23.5	24.3	22.2	22.1	22.7	21.4

VOLUMETRIC SOIL MOISTURE FOR THE MULTISPECTRAL SCANNER  
AUGUST 14, 1978

LOCATION			DEPTH INCREMENT (CM)						
LINE	RUN	FLD	(0-2)	(2-5)	(5-9)	(9-15)	(0-15)	(15-30)	(30-45)
1	1	2	3.6	5.2	9.8	14.5	9.6	22.5	24.5
1	1	4	20.5	21.4	21.5	20.5	20.6	20.2	17.6
1	1	6	20.3	20.0	18.2	16.6	18.7	18.1	19.7
1	1	7	7.6	14.0	18.5	20.2	17.7	21.0	22.8
1	1	8	4.9	6.5	8.3	11.9	10.6	18.0	19.3
1	1	1A	5.1	6.8	10.3	17.1	13.8	21.1	21.2
2	1	10	3.9	5.9	12.4	19.0	11.4	20.7	18.8
2	1	13	9.4	13.2	14.9	14.5	13.9	16.8	16.9
2	1	14	4.1	9.0	14.3	18.2	14.5	23.5	21.8
2	1	15	9.5	14.4	19.4	20.2	18.4	20.3	22.0
2	1	17	3.9	4.6	7.0	12.6	9.2	22.0	23.7
2	1	2A	6.1	12.8	19.0	26.5	19.8	27.9	27.5
3	1	1X	7.3	10.3	16.9	23.0	17.8	25.5	26.2
3	1	19	12.9	17.3	21.2	24.4	21.5	27.2	27.9
3	1	20	12.1	18.7	22.4	28.7	22.4	29.1	28.2
3	1	21	4.8	5.1	6.9	11.1	6.9	21.2	26.3
3	1	22	19.4	22.4	22.4	22.6	22.0	23.6	20.7
4	1	2X	5.5	6.6	9.7	21.1	14.9	29.3	31.2
4	1	24	18.8	24.6	28.0	30.5	28.5	32.7	32.3
4	1	25	27.4	26.6	30.8	35.5	29.7	28.8	29.3
4	1	26	4.5	6.3	8.4	12.5	9.2	22.0	23.4
4	1	27	11.2	18.7	19.0	18.6	17.0	21.8	19.7

VOLUMETRIC SOIL MOISTURE FOR THE MULTISPECTRAL SCANNER  
AUGUST 17, 1978

LOCATION			DEPTH INCREMENT (CM)						
LINE	RUN	FLD	(0-2)	(2-5)	(5-9)	(9-15)	(0-15)	(15-30)	(30-45)
1	1	2	3.3	4.8	9.2	16.0	9.1	23.7	24.8
1	1	4	9.4	12.1	14.2	14.4	13.9	16.7	17.7
1	1	6	5.3	12.5	15.2	16.1	14.0	16.9	17.2
1	1	7	4.5	10.9	16.1	18.3	15.6	19.1	21.6
1	1	8	3.2	5.6	7.5	11.0	9.6	16.7	18.1
1	1	1A	4.5	5.7	8.6	15.8	12.9	20.3	20.7
2	1	10	3.4	5.1	11.4	18.6	10.7	21.6	19.6
2	1	13	23.0	24.6	23.3	22.2	22.4	16.9	16.9
2	1	14	3.6	6.1	12.5	17.9	12.2	23.0	21.5
2	1	15	4.9	11.5	16.3	18.6	15.6	19.1	22.2
2	1	17	3.5	4.2	6.5	11.8	9.0	21.0	23.3
2	1	2A	5.4	10.1	18.0	24.9	17.4	27.0	26.6
3	1	1X	6.0	8.2	13.7	20.2	16.7	23.3	25.2
3	1	19	9.5	14.7	18.5	21.3	18.6	25.5	26.0
3	1	20	26.4	26.0	28.8	30.7	25.0	26.2	26.0
3	1	21	4.1	4.6	6.1	7.9	6.4	20.6	26.6
3	1	22	12.1	20.3	21.0	21.1	19.6	22.7	20.3
4	1	2X	5.2	6.5	10.0	21.3	14.5	29.0	31.1
4	1	24	13.1	19.7	24.0	27.8	24.7	29.7	30.5
4	1	25	10.6	17.5	21.5	27.2	21.0	26.6	26.3
4	1	26	4.5	6.0	8.2	11.9	8.6	21.3	23.4
4	1	27	5.5	10.8	13.8	14.8	12.5	18.4	18.4

13.3 GHZ SCATTEROMETER RETURN - VV POLARIZATION  
AUGUST 2, 1978

LOCATION			LOOK ANGLE (IN DEGREES)							
LINE	RUN	FLD	5	10	15	20	25	35	40	45
1	1	2	-1.1	-3.7	-6.9	-9.2	-8.7	-11.0	***	
1	1	4	2.2	-2.4	-6.3	-9.4	-8.4	-11.6		
1	1	6	-2.0	-3.8	-6.6	-10.2	-8.8	-11.9		
1	1	7	-0.4	-3.6	-6.5	-9.4	-9.0	-11.5		
1	1	8	-0.7	-2.7	-5.3	-7.8	-6.5	-8.9		
1	1	1A	-2.1	-3.1	-5.1	-7.2	-6.1	-8.7	-9.7	-9.0
1	1	2X	1.1	0.1	-2.8	-7.2	-6.5	-10.5		
1	1	1X	3.5	0.9	-2.3	-4.5	-4.5	-7.8		
3	1	1X	0.8	-1.2	-4.6	-6.5	-5.7	-9.0	-9.5	-10.1
3	1	19	2.3	0.1	-2.5	-3.6	-2.2	-5.7	-7.2	-8.0
3	1	20	9.6	7.8	2.1	-0.1	0.1	-5.8	-7.6	-8.0
3	1	21	0.4	-1.6	-5.5	-6.4	-6.2	-9.9	-10.4	-11.1
3	1	22	5.8	0.1	-5.3	-7.5	-6.9	-10.2	-11.0	-11.4
2	1	10	-2.6	-4.2	-7.2	-9.0	-7.8	-11.7	-12.4	
2	1	13	-3.2	-5.6	-8.5	-10.5	-9.5	-12.5	-12.5	
2	1	14	8.0	5.5	1.1	-2.7	-3.2	-8.9	-10.3	
2	1	15	0.1	-3.1	-6.8	-9.2	-9.0	-13.5	-13.6	
2	1	17	-2.6	-4.0	-7.3	-9.8	-8.6	-12.4	-12.2	-12.8
2	1	2A	-1.0	-2.4	-4.9	-7.4	-7.1	-10.2	-11.9	
2	1	2X	1.3	-0.1	-3.1	-5.8	-5.6	-10.1	-11.2	
2	1	1X	1.4	0.1	-2.9	-5.5	-4.2	-8.3	-8.3	
4	1	2X	1.0	-1.3	-5.7	-7.6	-6.8	-11.2	-11.2	-12.2
4	1	24	1.9	0.7	-2.2	-3.3	-1.5	-4.4	-6.0	-8.6
4	1	25	11.0	8.6	3.5	-0.1	-0.2	-6.2	-8.2	-9.7
4	1	26	-1.3	-2.4	-5.9	-7.8	-7.2	-10.5	-11.0	-11.4
4	1	27	7.7	1.8	-3.5	-6.7	-6.5	-10.7	-12.0	-12.8
1	2	2	-1.1	-3.7	-6.3	-9.1	-8.4	-12.2	-12.6	
1	2	4	2.3	-2.0	-6.2	-9.9	-9.1	-13.2	-12.4	
1	2	6	-2.0	-4.3	-6.9	-9.7	-9.0	-12.8	-13.4	
1	2	7	0.5	-3.4	-7.9	-9.2	-8.4	-12.2	-12.5	
1	2	8	-0.6	-2.5	-5.2	-7.7	-6.8	-10.2	-10.6	-10.6
1	2	1A	-2.0	-2.6	-5.0	-6.8	-6.0	-9.1	-10.4	
1	2	2X	0.1	0.1	-3.1	-7.2	-6.2	-10.6	-11.7	
1	2	1X	2.8	-0.3	-3.7	-6.0	-5.2	-9.8	-9.2	
3	2	1X	0.5	-1.8	-5.2	-5.6	-5.0	-8.8	-8.9	-11.9
3	2	19	5.1	2.0	-1.4	-2.5	-1.9	-6.3	-8.1	-9.0
3	2	20	12.2	9.4	2.5	-0.3	-0.7	-6.3	-8.2	-8.4
3	2	21	-0.8	-2.3	-6.0	-8.4	-7.7	-10.5	-11.0	-10.7
3	2	22	6.1	0.7	-5.2	-7.5	-7.4	-11.1	-11.6	
2	2	10	-3.2	-4.2	-6.5	-9.0	-8.5	-11.3	-11.5	-11.6
2	2	13	-3.1	-4.6	-8.0	-10.7	-9.5	-11.9	-12.9	-12.9
2	2	14	8.1	5.5	-0.3	-3.1	-3.5	-7.9	-8.7	-9.6
2	2	15	-0.3	-3.0	-7.8	-10.2	-9.0	-13.1	-13.8	
2	2	17	-2.1	-4.0	-7.1	-9.0	-8.0	-11.0	-12.5	
2	2	2A	-1.0	-2.2	-4.6	-7.7	-6.8	-10.3	-11.1	
2	2	2X	0.8	0.1	-3.3	-6.8	-6.1	-9.4	-10.5	-12.0
2	2	1X	3.4	0.1	-2.0	-5.4	-5.0	-6.9	-8.4	-8.1
4	2	2X	0.9	-1.4	-6.1	-6.7	-7.0	-10.3	-11.2	-11.7
4	2	24	2.3	0.6	-1.6	-3.3	-1.6	-6.8	-7.9	-8.5
4	2	25	9.4	7.3	2.2	-1.3	-0.7	-7.3	-8.8	-8.5
4	2	26	-3.4	-3.9	-6.8	-9.2	-7.7	-10.7	-11.0	-11.9
4	2	27	6.4	2.0	-3.6	-7.3	-7.4	-11.4	-12.0	-11.5

\*\*\* MISSING DATA DELETED DUE TO EXCESSIVE ROLL AND DRIFT

13.3 GHZ SCATTEROMETER RETURN - VV POLARIZATION  
AUGUST 5, 1978

LOCATION			LOOK ANGLE (IN DEGREES)							
LINE	RUN	FLD	5	10	15	20	25	35	40	45
1	1	2	5.3	1.1	-4.0	-8.4	-7.9	-13.3	***	
1	1	4	0.4	-2.4	-6.1	-8.9	-7.4	-11.0	-12.0	-11.4
1	1	6	3.2	0.1	-4.3	-7.9	-7.5	-12.6	-14.1	-14.6
1	1	7	1.9	-0.3	-4.0	-7.8	-7.7	-12.0	-11.8	-12.1
1	1	8	-0.1	-2.6	-5.8	-7.9	-6.4	-10.6	-11.4	-11.6
1	1	1A	-0.6	-1.8	-4.4	-6.8	-5.2	-8.4	-9.8	-9.3
1	1	2X	2.6	0.7	-3.1	-6.6	-5.5	-9.9	-11.5	-11.6
1	1	1X	4.0	3.4	0.6	-2.0	-0.9	-6.4	-7.1	-7.8
3	1	1X	1.7	1.3	-1.5	-4.3	-3.9	-6.9	-8.1	-8.5
3	1	19	3.5	2.5	0.2	-2.5	-1.5	-5.2	-7.0	-7.4
3	1	20	7.9	6.0	1.5	-2.3	-2.1	-5.8	-7.4	-6.2
3	1	21	-2.4	-3.1	-5.8	-8.7	-7.7	-10.0	-11.7	-11.1
3	1	22	3.7	0.5	-4.1	-8.0	-7.4	-10.1	-11.3	-8.6
2	1	10	7.9	3.7	-2.0	-6.4	-6.3	-12.0	-13.9	-14.6
2	1	13	2.6	-1.4	-4.1	-6.8	-5.8	-9.6	-10.3	-11.0
2	1	14	8.6	5.1	-1.0	-4.3	-4.6	-10.4	-11.7	-12.5
2	1	15	3.0	-0.2	-4.4	-7.5	-7.4	-11.8	-12.8	-13.6
2	1	17	-1.9	-4.7	-8.2	-9.6	-8.7	-11.9	-13.5	-13.6
2	1	2A	-0.1	-1.8	-6.1	-6.6	-6.3	-9.7	-10.1	-9.6
2	1	2X	3.2	0.4	-2.4	-5.9	-5.0	-9.9	-11.8	-12.8
2	1	1X	1.3	0.5	-1.8	-4.0	-3.3	-8.2	-9.0	-9.8
4	1	2X	17.1	-0.4	-3.9	-7.4	-6.5	-9.7		
4	1	24	3.7	2.5	0.4	-1.7	-0.9	-3.7	-6.9	-11.9
4	1	25	9.5	10.1	6.2	1.1	1.0	-3.5	-7.7	-9.1
4	1	26	-0.7	-3.5	-5.8	-8.8	-7.7	-9.7	-12.0	-11.7
4	1	27	5.2	-1.0	-5.7	-9.4	-7.7	-10.9	-6.8	-7.1
1	2	2	4.3	0.1	-5.7	-8.8	-8.7	-14.2	-15.4	-16.3
1	2	4	1.1	-2.0	-6.0	-8.7	-7.9	-11.3	-11.9	-11.6
1	2	6	2.1	-0.9	-5.7	-8.8	-8.8	-13.7	-15.2	-15.3
1	2	7	1.8	-1.0	-5.4	-8.6	-8.1	-12.7	-14.0	-13.5
1	2	8	3.4	0.1	-3.3	-5.9	-4.3	-9.0	-9.9	-10.4
1	2	1A	-0.9	-2.3	-5.5	-6.6	-5.4	-9.0	-9.9	-10.1
1	2	2X	1.3	-0.8	-4.0	-7.2	-6.0	-11.8	-12.1	-11.4
1	2	1X	4.7	3.1	-0.4	-2.1	-0.8	-6.9	-8.0	-8.4
3	2	1X	-0.1	-0.6	-2.5	-5.3	-4.5	-9.0	-8.3	-9.6
3	2	19	4.6	2.9	0.9	-1.3	-1.1	-6.1	-6.9	-8.4
3	2	20	6.8	5.5	1.2	-2.5	-2.5	-7.2	-8.1	-11.9
3	2	21	-2.8	-3.5	-6.8	-9.6	-8.3	-11.4	-12.1	-12.6
3	2	22	5.2	0.9	-4.1	-8.0	-6.9	-9.5	-10.7	-8.4
2	2	10	7.4	3.4	-2.1	-6.7	-7.9	-12.4	-13.9	-15.5
2	2	13	1.0	-1.7	-5.1	-6.5	-6.3	-9.9	-9.6	-10.0
2	2	14	8.6	5.1	-0.4	-4.5	-3.9	-10.3	-11.3	-11.6
2	2	15	2.6	-0.7	-5.8	-9.1	-8.6	-14.3	-14.8	-15.1
2	2	17	-3.1	-7.0	-10.4	-11.6	-9.6	-11.7	-13.7	-13.1
2	2	2A	0.2	-1.6	-5.0	-7.4	-6.5	-10.5	-11.0	-10.5
2	2	2X	1.8	-0.1	-3.8	-6.8	-6.2	-9.2		
2	2	1X	1.0	0.1	-2.1	-4.2	-3.4	-8.3	-9.6	-10.4
4	2	2X	0.4	-1.4	-4.9	-7.8	-7.2	-11.1		
4	2	24	3.3	1.7	0.1	-2.3	-0.3	-5.1	-7.5	-8.5
4	2	25	11.6	11.4	6.5	1.1	1.0	-5.3	-6.8	-8.4
4	2	26	-2.8	-4.4	-7.0	-9.1	-7.8	-11.5	-12.3	-11.9
4	2	27	5.6	-0.6	-4.9	-9.3	-9.1	-11.8	-12.8	

\*\*\* MISSING DATA DELETED DUE TO EXCESSIVE ROLL AND DRIFT

13.3 GHZ SCATTEROMETER RETURN - VV POLARIZATION  
AUGUST 8, 1978

LOCATION			LOOK ANGLE (IN DEGREES)							
LINE	RUN	FLD	5	10	15	20	25	35	40	45
1	1	2	7.1	3.9	-0.7	-5.5	-5.2	-10.4	-10.5	-11.0
1	1	4	1.2	-2.5	-6.2	-8.5	-6.8	-11.5	-11.8	-12.8
1	1	6	4.6	-0.4	-5.8	-8.7	-7.4	-13.4	-13.6	-14.2
1	1	7	4.4	-0.2	-4.8	-7.3	-7.6	-11.3	-12.9	-12.5
1	1	8	-0.3	-2.8	-6.0	-9.2	-7.7	-11.2	-12.5	-12.2
1	1	1A	-1.3	-2.6	-5.4	-7.2	-6.1	-9.1	-9.7	-9.5
1	1	2X	6.4	4.5	0.6	-2.7	-1.6	-6.6	-7.6	-7.4
1	1	1X	5.0	2.6	0.3	-1.9	-0.9	-6.9	-8.1	-7.9
3	1	1X	2.0	0.1	-2.9	-5.8	-4.3	-7.9	-8.8	-8.9
3	1	19	4.3	3.3	0.6	-1.9	-1.1	-4.9	-7.3	-7.4
3	1	20	10.3	8.5	3.5	-1.5	-1.1	-5.3	-6.7	-6.4
3	1	21	-0.8	-2.9	-5.6	-8.4	-7.3	-9.8	-11.5	-11.2
3	1	22	4.4	0.4	-3.1	-6.9	-6.4	-9.6	-10.4	-10.5
2	1	10	9.8	6.2	0.1	-4.9	-5.0	-9.3	-11.3	-11.2
2	1	13	1.5	-1.1	-4.2	-7.6	-6.5	-10.2	-10.9	-11.3
2	1	14	3.4	0.8	-4.2	-8.7	-8.5	-13.8	-13.8	-13.5
2	1	15	5.3	2.3	-2.1	-6.3	-5.6	-9.8	-10.1	-9.8
2	1	17	***							
2	1	2A	2.1	1.1	-2.0	-4.5	-3.4	-7.0	-8.0	-7.9
2	1	2X	5.9	4.3	0.4	-2.7	-2.3	-6.9	-8.7	-9.0
2	1	1X								
4	1	2X	4.3	2.1	-1.2	-5.3	-4.8	-8.2	-9.7	-9.0
4	1	24	2.9	2.1	0.1	-2.0	-1.3	-5.2	-7.5	-7.7
4	1	25	6.1	6.3	1.1	-3.5	-2.9	-7.3	-8.2	-8.2
4	1	26								
4	1	27	4.6	0.8	-3.4	-7.0	-5.7	-9.0	-11.4	-11.4
1	2	2								
1	2	4	0.5	-2.0	-5.2	-8.7	-8.0	-11.8	-12.0	-12.6
1	2	6								
1	2	7								
1	2	8	-0.5	-2.8	-5.8	-9.1	-8.3	-11.7	-11.8	-11.8
1	2	1A	-0.7	-2.2	-5.0	-6.4	-5.3	-9.0	-9.8	-10.7
1	2	2X	6.6	4.0	0.3	-2.3	-1.3	-6.6	-7.3	
1	2	1X	4.2	2.8		-2.1	-0.1	-6.8	-7.2	
3	2	1X	0.8	0.6	-2.6	-5.8	-4.9	-7.6	-8.0	-9.0
3	2	19	3.5	2.8	0.7	-1.4	-1.5	-5.7	-6.8	-8.7
3	2	20	10.6	8.4	3.4	-1.1	-1.4	-6.5	-6.7	-7.6
3	2	21	-1.8	-3.1	-5.2	-8.5	-7.4	-10.4	-11.4	-10.1
3	2	22	3.8	0.5	-2.7	-6.5	-5.6	-9.2	-10.6	-7.2
2	2	10	9.8	6.1	0.1	-4.2	-4.7	-9.9	-11.7	-11.4
2	2	13	1.3	-1.1	-3.7	-6.8	-5.4	-10.1	-10.9	-11.2
2	2	14	3.3	0.4	-4.5	-8.8	-8.8	-14.0	-14.9	-15.4
2	2	15	5.1	2.2	-2.4	-5.4	-5.5	-10.0	-10.3	-9.4
2	2	17	-0.9	-4.2	-7.2	-9.1	-8.0	-11.8	-12.1	-12.7
2	2	2A								
2	2	2X	5.3	4.1	0.1	-3.3	-2.9	-7.2	-9.8	-11.0
2	2	1X	1.6	2.1	-0.1	-2.7	-2.3	-8.4	-8.5	-9.0
4	2	2X	1.8	0.7	-2.4	-5.9	-5.2	-9.4	-10.4	-10.6
4	2	24	2.3	1.8	0.2	-2.8	-0.9	-5.6	-6.6	-7.9
4	2	25	8.1	6.0	1.0	-3.6	-3.3	-7.7	-7.8	-8.6
4	2	26	-2.6	-3.9	-5.7	-10.1	-8.4	-11.2	-11.7	-11.1
4	2	27	4.2	0.8	-3.2	-6.8	-6.3	-10.5	-11.0	

\*\*\* MISSING DATA DELETED DUE TO EXCESSIVE ROLL AND DRIFT

13.3 GHZ SCATTEROMETER RETURN - VV POLARIZATION  
AUGUST 11, 1978

LOCATION			LOOK ANGLE (IN DEGREES)							
LINE	RUN	FLD	5	10	15	20	25	35	40	45
1	1	2	3.0	-0.6	-5.3	-10.0	-9.7	-14.1	-15.0	-15.8
1	1	4	-3.5	-5.7	-7.6	-10.4	-8.9	-13.2	-11.7	-12.8
1	1	6	***							
1	1	7	6.4	2.2	-2.5	-6.2	-5.9	-9.9	-10.4	-11.2
1	1	8								
1	1	1A	-1.7	-1.8	-4.4	-6.9	-5.2	-8.7	-8.6	-9.1
1	1	2X								
1	1	1X	1.0	0.5	-2.0	-4.8	-4.0	-8.5	-9.2	-8.3
3	1	1X								
3	1	19								
3	1	20	7.3	6.5	2.4	-2.3	-1.7	-5.9	-6.5	-6.3
3	1	21	-2.7	-4.4	-7.4	-9.7	-8.5	-11.2	-11.6	-10.9
3	1	22								
2	1	10	3.5	-0.2	-5.3	-9.8	-10.5	-14.7	-15.6	-15.0
2	1	13	-2.1	-3.8	-5.9	-9.3	-7.6	-10.9	-11.0	-11.1
2	1	14	1.5	-1.0	-5.4	-9.6	-10.0	-13.9	-14.6	-14.5
2	1	15	2.4	-0.7	-4.6	-8.1	-7.5	-10.7	-11.6	-12.1
2	1	17	-2.5	-4.2	-7.2	-10.1	-9.5	-11.9	-12.8	-13.1
2	1	2A	0.3	-1.0	-3.9	-6.5	-5.7	-8.9	-9.8	-10.0
2	1	2X								
2	1	1X	-0.1	-0.4	-3.1	-4.9	-4.7	-8.3	-8.5	-8.9
4	1	2X	1.0	-0.7	-4.1	-8.2	-7.6	-10.2	-12.2	-9.1
4	1	24								
4	1	25								
4	1	26	-3.6	-5.1	-7.2	-9.9	-8.9	-11.3	-11.6	-12.4
4	1	27								
1	2	2	2.8	-1.0	-5.6	-9.8	-10.1	-14.4	-15.0	-14.1
1	2	4								
1	2	6								
1	2	7								
1	2	8	-1.2	-2.5	-4.9	-7.8	-6.3	-9.5	-9.6	-10.5
1	2	1A								
1	2	2X	1.1	-0.5	-2.8	-6.8	-6.0	-11.0	-10.9	-11.6
1	2	1X	1.0	0.8	-2.0	-4.4	-4.1	-6.7	-8.4	-8.6
3	2	1X	0.1	-1.2	-3.2	-6.2	-5.1	-8.1	-8.4	-7.9
3	2	19	1.7	1.5	-1.1	-3.9	-2.7	-6.4	-6.7	-7.0
3	2	20	7.4	6.6	2.7	-1.7	-1.3	-6.0	-6.5	-7.5
3	2	21	0.7	-3.5	-7.1	-9.9	-8.3	-11.1	-12.1	-10.8
3	2	22								
2	2	10	4.8	0.9	-4.8	-9.2	-9.2	-12.8	-15.3	
2	2	13	-1.0	-3.5	-7.0	-9.0	-7.5	-9.8	-11.0	-11.3
2	2	14	1.8	-1.3	-5.5	-9.6	-9.5	-14.1	-14.5	-14.5
2	2	15	4.2	0.8	-2.9	-7.1	-6.3	-9.8	-11.1	-11.5
2	2	17	-2.3	-4.4	-7.2	-9.7	-8.1	-11.9	-12.3	
2	2	2A								
2	2	2X								
2	2	1X	-0.2	-0.4	-2.5	-5.2	-4.0	-7.0	-8.4	-8.7
4	2	2X	0.1	-1.2	-4.4	-8.3	-7.5	-11.9	-12.4	-12.8
4	2	24								
4	2	25	9.1	7.1	2.2	-2.6	-2.5	-6.6	-6.6	-7.2
4	2	26								
4	2	27								

\*\*\* MISSING DATA DELETED DUE TO EXCESSIVE ROLL AND DRIFT

13.3 GHZ SCATTEROMETER RETURN - VV POLARIZATION  
AUGUST 14, 1978

LOCATION			LOOK ANGLE (IN DEGREES)							
LINE	RUN	FLD	5	10	15	20	25	35	40	45
1	2	2	4.1	0.1	-5.0	-8.8	-8.3	-12.9	-14.5	-14.3
1	2	4	***							
1	2	6	9.6	5.7	0.4	-2.7	-2.5	-8.2	-9.4	-10.1
1	2	7	2.8	-1.2	-5.4	-8.2	-6.6	-10.5	-10.8	-11.1
1	2	8	1.4	-1.4	-4.5	-6.4	-5.2	-8.5	-10.1	-10.7
1	2	1A	0.2	-1.4	-4.2	-5.5	-4.3	-8.2	-8.4	-8.3
1	2	2X	3.4	0.3	-3.6	-5.4	-5.1	-10.3	-11.5	-11.7
1	2	1X	7.9	0.1	-3.3	-4.9	-3.4	-7.4	-8.8	-9.1
3	2	1X	0.4	-0.9	-3.0	-5.6	-3.8	-7.9	-8.3	-7.5
3	2	19	3.1	1.8	-0.9	-3.6	-1.6	-5.0		
3	2	20	4.8	3.2	-0.6	-3.3	-2.5	-5.2	-5.6	-5.0
3	2	21	-1.5	-3.5	-6.2	-8.7	-7.3	-10.6	-11.3	-11.4
3	2	22	2.5	-1.2	-5.3	-8.0	-6.9	-10.2	-10.5	-10.6
2	2	10	6.0	1.6	-3.8	-8.8	-8.3	-14.0		
2	2	13	10.8	-3.4	-6.5	-8.3	-7.8	-11.6	-12.6	
2	2	14	3.9	0.1	-5.0	-8.1	-8.3	-13.4	-14.1	-15.0
2	2	15	2.7	-1.4	-5.8	-7.7	-7.2	-11.7	-12.2	-13.0
2	2	17	0.1	-3.6	-7.6	-8.4	-7.9	-11.6	-12.3	-12.3
2	2	2A	1.6	-0.1	-3.9	-5.5	-4.8	-8.0	-7.9	-8.5
2	2	2X	3.1	1.0	-2.8	-4.9	-4.7	-9.8	-10.5	-12.3
2	2	1X	1.4	0.1	-3.2	-4.6	-3.7	-8.3	-9.5	-8.3
4	2	2X	3.0	0.5	-3.5	-6.6	-5.6	-10.1	-10.5	-11.1
4	2	24	2.6	1.0	-1.3	-3.2	-2.0	-5.6	-6.6	-5.6
4	2	25	12.6	11.2	5.3	0.3	0.1	-5.7	-6.0	-6.0
4	2	26	-0.4	-3.7	-6.2	-8.6	-7.2	-11.3	-10.8	-11.4
4	2	27	2.2	-1.6	-5.4	-7.5	-7.4	-10.2	-10.9	-10.4
1	3	2	4.1	-0.3	-5.0	-8.1	-8.5	-13.6		
1	3	4	3.7	-1.0	-5.8	-6.2	-7.2	-11.0		
1	3	6	9.9	5.6	0.1	-2.8	-3.1	-8.1		
1	3	7	1.8	-1.3	-6.3	-8.1	-7.6	-11.6		
1	3	8	0.1	-1.3	-4.4	-5.5	-4.8	-8.4		
1	3	1A	0.2	-1.0	-4.6	-4.3	-4.4	-0.1		
1	3	2X	2.5	0.6	-2.6	-5.7	-4.9	-9.5		
1	3	1X	2.8	0.4	-2.6	-4.4	-4.0	-8.8		
3	3	1X								
3	3	19	3.2	1.8	-0.7	-3.3	-2.2	-5.1	-5.6	-6.7
3	3	20	5.5	3.0	-0.5	-3.4	-1.9	-5.8	-5.4	-6.6
3	3	21	-1.6	-3.8	-6.7	-8.9	-7.5	-11.0	-11.4	-11.7
3	3	22	4.3	-0.5	-4.4	-7.2	-6.9	-9.3	-9.6	-9.6
2	3	10	7.1	1.6	-4.7	-8.4	-7.8	-13.4	-15.0	-15.0
2	3	13								
2	3	14								
2	3	15	4.4	-1.2	-5.4	-8.2	-7.2	-11.3	-11.5	
2	3	17	-0.8	-3.7	-7.7	-9.0	-8.2	-12.1	-12.3	-12.9
2	3	2A	2.0	-0.4	-3.4	-5.1	-4.0	-7.6	-7.8	-8.5
2	3	2X	3.2	1.1	-3.3	-4.9	-5.0	-10.1	-10.8	-11.1
2	3	1X	1.4	-0.4	-3.5	-3.7	-4.0	-8.3	-8.5	-10.3
4	3	2X	2.4	0.1	-3.9	-6.6	-6.0	-10.9	-11.2	-12.2
4	3	24	1.5	0.1	-1.9	-3.4	-1.5	-5.7	-5.2	-6.0
4	3	25	12.3	9.6	3.9	0.1	0.6	-5.4	-6.3	-7.0
4	3	26	-1.8	-3.5	-7.3	-8.7	-7.5	-11.6	-11.2	-12.5
4	3	27	0.9	-1.5	-5.1	-7.1	-6.0	-9.2	-9.2	-10.6

\*\*\* MISSING DATA DELETED DUE TO EXCESSIVE ROLL AND DRIFT



13.3 GHZ SCATTEROMETER RETURN - VV POLARIZATION  
AUGUST 17, 1978

LOCATION			LOOK ANGLE (IN DEGREES)							
LINE	RUN	FLD	5	10	15	20	25	35	40	45
1	1	2	3.9	0.5	-3.7	-8.4	-8.7	-12.6	-14.6	-14.3
1	1	4	-1.2	-3.7	-6.2	-9.1	-9.0	-11.0	-12.6	-12.1
1	1	6	2.9	0.3	-4.0	-8.5	-8.9	-12.7	-14.0	-14.2
1	1	7	1.4	-1.5	-4.9	-8.3	-7.6	-10.3	-11.0	-10.5
1	1	8	2.3	0.8	-2.1	-5.6	-5.1	-7.9	-9.0	-8.8
1	1	1A	0.3	-1.5	-3.2	-6.0	-4.0	-7.0	-7.8	-7.4
1	1	2X	-2.0	-3.7	-5.7	-7.9	-5.6	-6.5	-10.4	-10.3
1	1	1X	0.9	0.3	-1.6	-3.8	-3.5	-6.7	-8.2	-7.4
3	1	1X	5.1	2.0	-1.2	-3.6	-2.5	-8.3	-9.9	-12.0
3	1	19	4.4	2.4	-0.4	-2.6	-1.7	-5.3	-5.8	-5.9
3	1	20	12.8	8.2	2.1	-0.7	-0.3	-5.0	-5.7	-6.5
3	1	21	-0.5	-3.5	-6.4	-8.1	-6.4	***		
3	1	22	6.0	-0.5	-5.5	-8.2	-7.9			
2	1	10	5.4	1.5	-3.3	-8.3	-8.7	-12.2	-14.6	-13.6
2	1	13	2.1	0.4	-4.3	-7.7	-7.0	-10.6	-11.7	-11.9
2	1	14	3.0	0.1	-3.5	-7.8	-8.9	-12.8	-13.8	-13.8
2	1	15	1.5	-1.8	-5.6	-8.6	-8.2	-10.6	-11.5	-11.2
2	1	17	-0.5	-2.8	-5.4	-8.6	-7.9	-10.7	-11.6	-12.4
2	1	2A	0.8	-0.2	-2.4	-5.4	-4.1	-7.1	-7.9	-8.2
2	1	2X	-1.8	-3.2	-5.2	-7.2	-5.8	-7.5	-9.2	-10.9
2	1	1X	3.8	3.0	1.2	-2.4	-1.5	-5.7	-8.3	-7.7
4	1	2X	-3.3	-4.8	-7.9	-8.8	-7.8			
4	1	24	3.2	1.4	-0.8	-2.6	-0.8			
4	1	25	5.5	3.1	-0.8	-4.4	-2.9			
4	1	26	-2.4	-3.8	-6.2	-8.3	-7.1			
4	1	27	3.2	-2.0	-7.5	-9.8	-8.6			
1	2	2	3.2	-0.2	-4.2	-9.2	-9.1	-13.3	-14.1	-14.6
1	2	4	-1.4	-3.3	-7.1	-9.7	-8.6	-11.7	-12.5	-11.6
1	2	6	3.5	-0.1	-4.2	-9.0	-9.1	-13.4	-14.6	-15.3
1	2	7	1.1	-1.7	-4.8	-7.7	-7.1	-9.4	-10.5	-10.6
1	2	8	1.3	-0.1	-2.5	-6.1	-5.1	-8.5	-10.2	-10.3
1	2	1A	-0.7	-1.2	-2.6	-6.0	-4.8	-7.7	-8.5	-8.7
1	2	2X	-2.7	-3.0	-4.8	-7.4	-5.8	-9.0	-10.1	-11.0
1	2	1X	0.4	0.1	-0.7	-4.6	-4.0	-8.0	-8.6	-8.4
3	2	1X	0.6	-0.3	-3.7	-5.0	-3.9	-8.0		
3	2	19	3.7	2.5	-0.1	-2.5	-1.8	-5.3		
3	2	20	10.2	8.0	2.7	-0.7	0.1	-4.9		
3	2	21								
3	2	22								
2	2	10	5.3	2.0	-3.1	-8.6	-8.4	-12.3	-14.4	-14.7
2	2	13	1.5	-0.9	-3.7	-7.6	-7.4	-10.3	-10.4	-11.4
2	2	14	3.2	0.6	-4.2	-8.8	-8.8	-12.5	-13.6	-13.8
2	2	15	2.4	-1.0	-4.3	-9.2	-8.3	-11.3	-12.5	-12.5
2	2	17	-1.1	-3.0	-5.5	-8.9	-7.5	-11.1	-11.7	-12.4
2	2	2A	-0.1	-0.2	-2.6	-4.9	-3.8	-7.0	-7.3	-7.6
2	2	2X	-2.6	-3.4	-5.3	-7.8	-6.0	-8.7	-9.9	-11.1
2	2	1X	2.3	2.3	1.0	-2.0	-1.3	-6.8	-7.6	-8.1
4	2	2X	2.1	-4.0	-7.4	-8.9	-7.7	-10.9	-11.9	
4	2	24	1.9	1.0	-1.1	-2.8	-1.7	-5.9	-5.9	
4	2	25	5.7	3.7	-0.4	-3.6	-2.7	-7.2	-7.0	
4	2	25	-1.8	-4.1	-7.3	-7.7	-7.5	-10.1	-11.6	-11.4
4	2	27	3.4	-1.8	-6.7	-9.9	-9.0	-12.8	-12.9	-12.5

\*\*\* MISSING DATA DELETED DUE TO EXCESSIVE ROLL AND DRIFT

1.6 GHZ SCATTEROMETER RETURN - HH POLARIZATION  
AUGUST 2, 1978

LOCATION			LOOK ANGLE (IN DEGREES)							
LINE	RUN	FLD	5	10	15	20	25	35	40	45
1	1	2	-8.3	-11.7	-14.2	-15.9	-17.2	-20.2	***	
1	1	4	-5.3	-9.8	-12.2	-14.0	-16.9	-19.1		
1	1	6	-9.1	-12.8	-14.5	-16.8	-18.3	-21.0		
1	1	7	-8.9	-13.3	-15.9	-18.7	-21.5	-23.5		
1	1	8	-12.8	-16.3	-17.7	-18.0	-18.8	-19.8		
1	1	1A	-11.6	-13.7	-14.4	-14.3	-15.8	-17.5	-19.2	-18.8
1	1	2X	-2.2	-6.4	-10.1	-11.6	-12.2	-16.1		
1	1	1X	-3.1	-1.7	-3.3	-4.6	-6.3	-8.5		
3	1	1X	-9.5	-11.6	-11.6	-12.3	-11.8	-13.6	-15.8	-16.2
3	1	19	2.5	-0.9	1.1	-1.0	-2.5	-3.1	-7.4	-9.5
3	1	20	7.9	5.9	3.8	4.0	0.1	-5.2	-8.0	-9.9
3	1	21	-1.6	-4.9	-6.6	-8.6	-10.0	-14.0	-15.8	-17.9
3	1	22	5.8	-6.0	-10.6	-14.2	-16.0	-18.9	-21.6	-21.7
2	1	10	-4.6	-9.2	-11.5	-13.3	-16.1	-19.2	-20.2	
2	1	13	-8.2	-11.3	-12.6	-13.1	-14.3	-16.7	-18.4	
2	1	14	-2.2	-5.5	-7.8	-9.4	-11.4	-14.6	-16.7	
2	1	15	-6.5	-10.7	-13.9	-16.2	-16.5	-22.6	-23.3	
2	1	17	-4.5	-10.9	-14.5	-16.0	-17.7	-20.8	-21.9	-23.1
2	1	2A	-10.7	-13.2	-14.3	-14.4	-15.8	-17.6	-19.3	
2	1	2X	-2.3	-6.3	-9.9	-10.6	-14.2	-17.2	-18.4	
2	1	1X	-1.7	-0.6	-1.5	-6.4	-7.2	-6.1	-11.8	
4	1	2X	-7.2	-10.8	-13.1	-14.7	-16.6	-19.6	-20.5	-22.6
4	1	24	3.4	-0.5	1.5	1.7	-2.5	-3.2	-7.0	-10.6
4	1	25	5.0	4.3	1.9	2.2	-1.7	-7.2	-10.0	-12.1
4	1	26	-1.4	-6.0	-8.3	-9.2	-11.5	-14.4	-16.8	-18.2
4	1	27	5.7	-6.2	-11.4	-14.2	-15.7	-16.5	-20.3	-22.8

\*\*\* MISSING DATA DELETED DUE TO EXCESSIVE ROLL AND DRIFT

1.6 GHZ SCATTEROMETER RETURN - HH POLARIZATION  
AUGUST 5, 1978

LOCATION			LOOK ANGLE (IN DEGREES)							
LINE	RUN	FLD	5	10	15	20	25	35	40	45
1	1	2	-4.7	-9.1	-12.9	-14.8	-16.8	-20.6	***	
1	1	4	-8.1	-12.6	-14.9	-17.5	-19.5	-20.7	-22.7	-23.2
1	1	6	-5.5	-9.5	-11.6	-13.3	-15.9	-19.2	-21.9	-22.6
1	1	7	-4.2	-9.8	-13.7	-16.3	-19.5	-23.9	-25.6	-26.6
1	1	8	-11.7	-14.9	-17.1	-17.1	-18.7	-21.0	-22.6	-22.5
1	1	1A	-12.9	-15.5	-15.7	-16.9	-17.5	-19.5	-20.4	-19.8
1	1	2X	-3.3	-6.7	-10.3	-11.6	-12.3	-17.4	-19.7	-22.4
1	1	1X	-1.2	1.2	0.3	-3.5	-5.2	-5.6	-11.3	-12.9
3	1	1X	-8.8	-10.8	-11.5	-10.9	-11.6	-13.5	-15.2	-17.1
3	1	19	0.8	-1.3	-0.9	-0.7	-3.9	-4.7	-6.7	-12.7
3	1	20	4.2	2.1	-0.2	-0.1	-4.3	-8.8	-11.9	-14.0
3	1	21	-8.9	-11.5	-13.3	-13.8	-15.9	-18.6	-19.0	-21.8
3	1	22	2.7	-6.2	-11.4	-13.7	-16.1	-18.9	-21.8	-22.9
2	1	10	-1.7	-6.1	-9.3	-11.6	-14.7	-20.4	-21.9	-21.5
2	1	13	-0.8	-6.4	-6.8	-8.5	-11.0	-13.5	-16.2	-18.1
2	1	14	-2.0	-5.8	-7.6	-9.8	-12.2	-15.6	-17.6	-19.6
2	1	15	-2.6	-6.5	-11.3	-13.8	-15.3	-19.6	-21.8	-22.3
2	1	17	-3.0	-10.0	-13.5	-15.5	-18.2	-21.6	-22.8	-24.3
2	1	2A	-10.4	-12.0	-13.4	-13.5	-15.0	-16.6	-17.0	-19.3
2	1	2X	-2.0	-6.9	-10.5	-11.4	-12.6	-17.1	-19.5	-21.2
2	1	1X	-5.2	-4.3	-3.1	-6.4	-5.4	-12.5	-13.0	-16.1
4	1	2X	-4.5	-7.9	-11.3	-13.1	-14.7	-17.3		
4	1	24	1.0	-1.5	-2.1	-0.4	0.7	-3.2	-6.9	-10.7
4	1	25	4.2	3.3	1.5	2.5	-1.0	-7.4	-11.2	-26.0
4	1	26	-7.7	-11.7	-14.4	-16.8	-19.4	-21.1	-22.1	-23.7
4	1	27	0.1	-12.8	-17.6	-20.7	-22.0	-24.9	-25.6	-27.9

\*\*\* MISSING DATA DELETED DUE TO EXCESSIVE ROLL AND DRIFT

1.6 GHZ SCATTEROMETER RETURN - HH POLARIZATION  
AUGUST 8, 1978

LOCATION			LOOK ANGLE (IN DEGREES)							
LINE	RUN	FLD	5	10	15	20	25	35	40	45
1	1	2	0.1	-4.4	-6.8	-8.9	-11.9	-16.0	-18.7	-20.6
1	1	4	-4.9	-10.4	-13.6	-15.0	-17.2	-19.4	-20.5	-21.8
1	1	6	-5.4	-9.9	-12.6	-14.5	-16.8	-19.4	-21.7	-22.0
1	1	7	-2.2	-7.8	-12.0	-14.4	-17.7	-20.0	-22.6	-23.7
1	1	8	-9.0	-12.2	-14.9	-15.0	-17.3	-20.2	-21.6	-22.8
1	1	1A	-12.2	-15.0	-15.6	-15.5	-16.9	-17.8	-20.5	-19.7
1	1	2X	5.4	-0.4	-3.9	-5.0	-9.2	-11.6	-13.2	-16.4
1	1	1X	0.6	-1.6	-3.4	-3.4	-4.9	-3.1	-9.4	-11.0
3	1	1X	-10.3	-11.7	-11.6	-10.6	-11.5	-14.3	-15.3	-17.2
3	1	19	2.3	-0.3	0.1	-1.4	-0.7	-3.5	-7.4	-10.9
3	1	20	7.2	5.0	2.2	2.7	-1.9	-6.7	-9.4	-12.6
3	1	21	-6.7	-10.7	-12.7	-13.6	-15.0	-18.1	-19.1	-21.7
3	1	22	2.5	-5.8	-9.9	-13.3	-16.5	-15.6	-19.1	-20.2
2	1	10	0.1	-4.0	-8.6	-10.5	-14.0	-18.3	-22.1	-22.3
2	1	13	-2.3	-8.6	-9.7	-10.3	-13.3	-17.4	-18.4	-21.1
2	1	14	-6.0	-10.6	-13.0	-15.0	-16.6	-20.2	-21.7	-23.0
2	1	15	-2.0	-5.6	-9.0	-9.8	-11.5	-13.2	-15.0	-16.9
2	1	17	***							
2	1	2A	-7.0	-9.9	-9.6	-10.2	-11.2	-13.6	-15.3	-16.2
2	1	2X	5.7	-0.2	-3.9	-5.0	-9.0	-11.4	-14.0	-16.7
2	1	1X								
4	1	2X	-3.2	-7.1	-9.8	-11.4	-14.4	-17.9	-19.1	-20.9
4	1	24	0.7	0.4	1.2	0.3	-1.6	-3.8	-7.6	-11.2
4	1	25	0.8	1.0	-1.6	-0.7	-4.4	-10.3	-12.9	-13.4
4	1	26								
4	1	27	3.3	-7.2	-12.1	-13.9	-16.3	-17.5	-20.9	-21.4

\*\*\* MISSING DATA DELETED DUE TO EXCESSIVE ROLL AND DRIFT

1.6 GHZ SCATTEROMETER RETURN - HH POLARIZATION  
AUGUST 11, 1978

LOCATION			LOOK ANGLE (IN DEGREES)							
LINE	RUN	FLD	5	10	15	20	25	35	40	45
1	1	2	-7.5	-12.0	-15.1	-16.6	-18.9	-23.2	-24.7	-26.9
1	1	4	-5.0	-16.6	-18.9	-19.5	-21.5	-24.0	-25.3	-26.4
1	1	6	***							
1	1	7	1.2	-6.0	-10.8	-14.1	-17.0	-20.3	-21.0	-22.7
1	1	8								
1	1	1A	-11.7	-14.8	-15.8	-16.7	-17.4	-19.1	-19.7	-20.0
1	1	2X								
1	1	1X	-3.9	-0.4	-2.9	-6.6	-6.7	-10.9	-13.1	-16.3
3	1	1X								
3	1	19								
3	1	20	2.8	2.9	0.6	0.5	-2.5	-8.3	-11.2	-13.2
3	1	21	-9.0	-12.2	-13.9	-13.8	-15.8	-18.0	-20.1	-20.7
3	1	22								
2	1	10	-7.0	-11.3	-14.2	-16.2	-19.1	-21.7	-24.4	-26.6
2	1	13	-5.4	-10.7	-12.8	-12.9	-15.6	-18.7	-20.7	-21.9
2	1	14	-11.1	-13.9	-16.8	-16.8	-18.9	-21.6	-22.9	-25.9
2	1	15	-4.2	-11.0	-13.7	-16.2	-19.2	-21.5	-22.1	-24.2
2	1	17	-6.8	-11.6	-15.7	-18.2	-19.9	-22.2	-23.9	-25.9
2	1	2A	-10.7	-12.6	-14.7	-14.5	-16.0	-18.6	-19.8	-19.8
2	1	2X								
2	1	1X	-5.5	-3.6	-3.7	-7.0	-10.7	-10.6	-13.8	-17.8
4	1	2X	-9.3	-12.5	-15.4	-17.0	-18.1	-21.2	-22.6	-25.4
4	1	24								
4	1	25								
4	1	26	-10.4	-14.2	-15.7	-15.2	-16.8	-19.2	-20.1	-21.5
4	1	27								

\*\*\* MISSING DATA DELETED DUE TO EXCESSIVE ROLL AND DRIFT

1.6 GHZ SCATTEROMETER RETURN - HH POLARIZATION  
AUGUST 14, 1978

LOCATION			LOOK ANGLE (IN DEGREES)							
LINE	RUN	FLD	5	10	15	20	25	35	40	45
1	3	2	-6.5	-10.5	-13.2	-15.9	-17.7	-21.6	***	
1	3	4	-5.6	-11.0	-13.7	-15.6	-17.6	-19.7		
1	3	6	-3.1	-6.8	-8.6	-9.9	-11.9	-16.3		
1	3	7	-6.5	-12.1	-15.7	-18.2	-19.4	-21.8		
1	3	8	-11.7	-14.8	-16.2	-16.3	-17.9	-19.1		
1	3	1A	-11.3	-13.4	-14.8	-15.1	-16.5	-16.8		
1	3	2X	-3.2	-7.2	-11.2	-12.5	-12.5	-18.1		
1	3	1X	-4.6	-5.6	-5.8	-8.7	-10.8	-14.4		
3	3	1X								
3	3	19	-0.1	-1.5	-2.6	-1.7	-4.4	-7.1	-9.3	-11.3
3	3	20	0.2	-0.8	-3.5	-3.0	-6.2	-12.0	-14.3	-14.7
3	3	21	-7.0	-10.0	-12.9	-13.8	-15.4	-18.2	-18.4	-21.4
3	3	22	2.4	-6.5	-11.5	-15.5	-16.8	-20.8	-22.3	-23.7
2	3	10	-2.8	-8.9	-12.6	-14.8	-16.5	-21.6	-23.5	-26.1
2	3	13								
2	3	14								
2	3	15	-4.1	-9.1	-14.6	-17.0	-18.4	-20.8	-22.0	
2	3	17	-3.9	-11.2	-14.4	-16.6	-18.2	-21.9	-24.0	-25.8
2	3	2A	-9.2	-11.8	-13.4	-14.4	-15.8	-17.9	-18.8	-18.8
2	3	2X	-4.1	-7.6	-10.4	-11.4	-12.7	-17.7	-20.4	-22.9
2	3	1X	-5.8	-3.7	-0.9	-7.2	-9.8	-9.6	-11.6	-18.1
4	3	2X	-7.0	-10.5	-12.4	-14.1	-16.8	-20.4	-22.2	-23.0
4	3	24	-0.1	-3.1	-1.9	-3.1	-4.9	-7.1	-10.5	-15.0
4	3	25	6.1	4.2	1.2	1.7	-2.9	-8.3	-10.7	-12.2
4	3	26	-7.8	-11.2	-13.9	-13.5	-15.1	-17.3	-18.5	-20.3
4	3	27	2.6	-7.7	-12.0	-14.8	-17.1	-20.5	-22.9	-24.5

\*\*\* MISSING DATA DELETED DUE TO EXCESSIVE ROLL AND DRIFT

1.6 GHZ SCATTEROMETER RETURN - HH POLARIZATION  
AUGUST 17, 1978

LOCATION			LOOK ANGLE (IN DEGREES)							
LINE	RUN	FLD	5	10	15	20	25	35	40	45
1	1	2	-5.4	-9.4	-12.7	-14.1	-16.5	-20.5	-22.1	-23.8
1	1	4	-7.8	-12.3	-16.6	-17.3	-20.2	-22.5	-23.0	-24.8
1	1	6	-7.9	-11.3	-13.4	-14.4	-17.2	-19.2	-21.1	-23.1
1	1	7	-6.5	-10.7	-14.9	-16.3	-18.2	-20.2	-20.6	-22.1
1	1	8	-9.7	-11.1	-13.3	-14.0	-15.0	-16.9	-18.5	-18.9
1	1	1A	-10.6	-13.0	-13.7	-13.9	-15.2	-16.4	-16.9	-18.0
1	1	2X	-1.6	-4.9	-7.2	-6.3	-3.5	-1.1	-10.0	-15.1
1	1	1X	-5.1	-3.5	-3.4	-6.2	-8.9	-7.4	-12.0	-14.2
3	1	1X	-8.2	-8.5	-8.6	-9.2	-9.6	-13.1	-15.1	-17.6
3	1	19	0.5	-1.3	-0.3	-2.5	-4.4	-9.4	-12.2	-14.2
3	1	20	5.8	5.5	2.3	2.8	-1.8	-8.1	-9.2	-12.4
3	1	21	-5.9	-8.3	-10.8	-9.1	-11.7	***		
3	1	22	1.9	-6.0	-11.3	-13.3	-15.2			
2	1	10	-3.1	-8.2	-11.7	-13.8	-16.3	-20.3	-20.8	-24.6
2	1	13	-1.8	-5.6	-7.5	-9.1	-12.7	-15.7	-17.1	-18.2
2	1	14	-6.4	-10.1	-13.4	-14.5	-16.9	-21.0	-21.8	-24.9
2	1	15	-6.1	-10.3	-15.0	-16.0	-18.8	-21.2	-21.7	-23.0
2	1	17	-3.4	-10.0	-15.0	-16.4	-18.3	-22.2	-22.2	-23.8
2	1	2A	-10.2	-11.6	-13.0	-13.3	-15.0	-16.7	-17.1	-18.6
2	1	2X	-3.7	-6.0	-8.4	-4.1	-5.3	-4.5	-7.7	-15.5
2	1	1X	4.4	5.3	2.5	-0.5	-2.5	-3.3	-7.0	-10.2
4	1	2X	-6.6	-11.2	-14.6	-15.6	-17.7			
4	1	24	-5.3	-7.3	-9.2	-11.6	-14.5			
4	1	25	-8.0	-11.8	-12.9	-13.9	-15.2			
4	1	26	-3.6	-10.0	-16.3	-18.5	-21.5			
4	1	27	-4.6	-9.1	-13.0	-14.7	-15.2			

\*\*\* MISSING DATA DELETED DUE TO EXCESSIVE ROLL AND DRIFT

1.6 GHZ SCATTEROMETER RETURN - HV POLARIZATION  
AUGUST 2, 1978

LOCATION			LOOK ANGLE (IN DEGREES)							
LINE	RUN	FLD	5	10	15	20	25	35	40	45
1	1	2	-18.4	-21.9	-23.5	-24.6	-25.5	-27.3	***	
1	1	4	-16.4	-19.4	-20.1	-20.8	-21.9	-22.9		
1	1	6	-20.0	-21.6	-24.2	-24.4	-26.1	-27.6		
1	1	7	-19.3	-22.3	-25.2	-25.9	-26.9	-28.8		
1	1	8	-18.9	-20.8	-21.0	-20.1	-20.3	-21.4		
1	1	1A	-18.7	-19.3	-20.0	-19.6	-20.3	-21.0	-21.6	-22.5
1	1	2X	-21.0	-22.2	-24.9	-24.0	-25.4	-27.8		
1	1	1X	-17.9	-18.9	-19.3	-17.4	-17.3	-17.7		
3	1	1X	-18.7	-18.7	-17.9	-16.1	-15.5	-17.2	-19.1	-19.1
3	1	19	-17.6	-18.5	-16.0	-17.0	-17.2	-17.2	-19.6	-21.4
3	1	20	-14.5	-13.4	-12.1	-11.2	-13.1	-15.8	-18.1	-18.1
3	1	21	-17.9	-18.6	-18.3	-18.3	-18.7	-20.7	-22.4	-23.3
3	1	22	-17.8	-20.7	-22.7	-20.6	-23.5	-25.4	-26.9	-26.1
2	1	10	-19.5	-22.4	-23.0	-23.1	-25.0	-27.5	-29.1	
2	1	13	-19.0	-20.2	-20.4	-20.1	-20.1	-22.6	-23.3	
2	1	14	-18.0	-18.7	-19.3	-18.4	-18.1	-20.6	-21.7	
2	1	15	-19.8	-22.3	-23.6	-24.8	-26.1	-29.6	-30.4	
2	1	17	-19.7	-23.1	-24.9	-25.1	-25.9	-30.1	-29.4	-30.5
2	1	2A	-20.0	-22.1	-22.4	-21.5	-21.2	-22.7	-23.8	
2	1	2X	-20.3	-22.6	-22.6	-22.6	-23.9	-27.7	-27.1	
2	1	1X	-17.3	-17.5	-16.7	-17.7	-15.6	-16.4	-18.4	
4	1	2X	-20.9	-23.4	-25.0	-26.0	-24.3	-29.8	-29.4	-30.3
4	1	24	-18.3	-18.1	-14.0	-13.1	-14.7	-17.7	-19.3	-22.3
4	1	25	-16.4	-15.5	-13.6	-13.2	-13.5	-17.9	-19.1	-20.1
4	1	26	-18.1	-19.3	-18.9	-18.7	-18.5	-22.0	-23.8	-24.4
4	1	27	-17.5	-22.8	-23.9	-25.4	-24.5	-27.1	-29.2	-28.9

\*\*\* MISSING DATA DELETED DUE TO EXCESSIVE ROLL AND DRIFT



1.6 GHZ SCATTEROMETER RETURN - HV POLARIZATION  
AUGUST 5, 1978

LOCATION			LOOK ANGLE (IN DEGREES)							
LINE	RUN	FLD	5	10	15	20	25	35	40	45
1	1	2	-17.7	-19.1	-21.5	-22.2	-23.2	-25.3	***	
1	1	4	-18.1	-19.5	-21.6	-21.5	-23.0	-24.3	-25.4	-26.3
1	1	6	-18.5	-18.9	-20.9	-21.3	-22.1	-23.7	-24.5	-25.4
1	1	7	-18.3	-19.8	-22.4	-22.8	-24.2	-24.8	-25.2	-27.3
1	1	8	-17.9	-18.5	-18.9	-19.1	-19.8	-20.5	-22.1	-21.5
1	1	1A	-17.9	-17.8	-19.5	-18.1	-18.1	-18.7	-20.3	-20.6
1	1	2X	-19.4	-20.1	-20.9	-20.1	-20.2	-23.1	-26.7	-27.0
1	1	1X	-13.8	-13.2	-9.7	-11.4	-11.8	-12.4	-13.3	-15.6
3	1	1X	-15.9	-15.7	-14.9	-13.5	-14.0	-15.5	-16.9	-19.4
3	1	19	-16.1	-16.2	-15.2	-15.5	-16.0	-17.3	-17.9	-18.5
3	1	20	-13.2	-14.3	-12.3	-11.1	-12.4	-14.8	-16.4	-17.2
3	1	21	-18.3	-19.2	-21.4	-20.7	-20.8	-23.0	-23.9	-24.2
3	1	22	-15.0	-18.4	-20.8	-19.3	-21.2	-22.8	-24.4	-23.0
2	1	10	-17.6	-19.6	-19.6	-20.0	-22.3	-24.8	-25.9	-26.9
2	1	13	-13.8	-15.2	-14.4	-15.0	-16.1	-18.0	-19.7	-21.7
2	1	14	-16.9	-18.6	-18.8	-19.2	-19.3	-21.7	-22.4	-24.0
2	1	15	-17.4	-18.9	-21.1	-21.7	-22.2	-24.4	-25.1	-26.3
2	1	17	-19.0	-21.2	-22.5	-22.9	-24.5	-27.3	-29.9	-28.1
2	1	2A	-18.8	-19.3	-17.7	-17.4	-16.1	-17.4	-18.4	-18.4
2	1	2X	-18.8	-20.7	-19.3	-20.0	-21.7	-24.3	-26.1	-26.4
2	1	1X	-16.9	-16.2	-14.4	-15.4	-13.5	-17.5	-18.0	-18.4
4	1	2X	-10.5	-19.9	-22.6	-22.6	-23.9	-25.7		
4	1	24	-16.8	-17.2	-15.4	-13.1	-11.1	-16.5	-16.8	-18.4
4	1	25	-15.0	-15.3	-13.8	-9.9	-10.8	-14.8	-16.1	-17.9
4	1	26	-19.7	-20.8	-23.4	-23.4	-25.1	-27.0	-28.7	-28.9
4	1	27	-17.7	-20.5	-24.4	-25.2	-26.2	-28.7	-31.0	-30.8

\*\*\* MISSING DATA DELETED DUE TO EXCESSIVE ROLL AND DRIFT

1.6 GHZ SCATTEROMETER RETURN - HV POLARIZATION  
AUGUST 8, 1978

LOCATION			LOOK ANGLE (IN DEGREES)							
LINE	RUN	FLD	5	10	15	20	25	35	40	45
1	1	2	-18.2	-20.5	-20.9	-21.2	-22.0	-24.0	-24.8	-26.4
1	1	4	-20.1	-22.5	-22.8	-24.2	-25.0	-27.0	-27.1	-28.5
1	1	6	-20.3	-22.8	-23.1	-24.0	-25.7	-27.5	-29.3	-28.8
1	1	7	-18.4	-21.9	-22.0	-23.2	-24.0	-25.2	-26.3	-27.8
1	1	8	-20.2	-20.7	-20.1	-20.0	-19.9	-21.1	-22.4	-23.1
1	1	1A	-18.9	-20.6	-19.7	-19.5	-19.1	-20.3	-20.8	-23.2
1	1	2X	-16.5	-19.0	-17.5	-17.6	-20.8	-24.0	-23.1	-24.0
1	1	1X	-15.0	-15.0	-14.4	-13.4	-12.2	-12.5	-15.3	-16.0
3	1	1X	-17.7	-17.0	-15.8	-14.0	-14.9	-15.0	-17.6	-19.5
3	1	19	-17.5	-17.1	-15.3	-14.6	-15.4	-19.1	-19.2	-19.9
3	1	20	-14.1	-14.4	-12.9	-12.7	-13.4	-17.1	-18.0	-18.4
3	1	21	-19.3	-22.3	-23.4	-22.2	-23.9	-25.6	-26.7	-27.0
3	1	22	-17.1	-21.5	-23.1	-20.3	-23.5	-24.6	-25.5	-25.3
2	1	10	-17.1	-19.8	-21.6	-21.5	-22.3	-25.7	-25.9	-27.0
2	1	13	-16.3	-18.2	-18.3	-18.2	-19.8	-21.8	-23.7	-25.5
2	1	14	-20.4	-23.1	-25.0	-24.8	-26.3	-28.4	-29.2	-29.2
2	1	15	-16.7	-19.1	-18.1	-19.2	-18.4	-18.2	-20.4	-20.9
2	1	17	***							
2	1	2A	-16.5	-17.5	-16.8	-16.1	-15.8	-16.4	-17.0	-18.4
2	1	2X	-17.2	-19.8	-18.7	-20.6	-21.7	-23.1	-22.6	-23.4
2	1	1X								
4	1	2X	-18.4	-20.2	-21.8	-22.3	-23.3	-24.9	-26.1	-26.9
4	1	24	-18.0	-18.9	-16.1	-16.1	-16.8	-19.6	-19.8	-21.4
4	1	25	-17.4	-18.2	-17.3	-15.5	-16.6	-18.5	-19.4	-20.6
4	1	26								
4	1	27	-16.8	-19.9	-23.5	-22.8	-24.4	-26.2	-27.5	-29.2

\*\*\* MISSING DATA DELETED DUE TO EXCESSIVE ROLL AND DRIFT

1.6 GHZ SCATTEROMETER RETURN - HV POLARIZATION  
AUGUST 11, 1978

LOCATION			LOOK ANGLE (IN DEGREES)							
LINE	RUN	FLD	5	10	15	20	25	35	40	45
1	1	2	-20.8	-22.4	-25.5	-26.5	-27.7	-31.3	-31.6	-30.8
1	1	4	-21.1	-24.0	-26.4	-24.4	-26.9	-28.4	-30.2	-30.8
1	1	6	***							
1	1	7	-17.9	-21.1	-21.6	-21.5	-21.8	-22.9	-23.7	-24.0
1	1	8								
1	1	1A	-19.6	-20.3	-20.8	-20.7	-20.5	-21.2	-22.4	-23.8
1	1	2X								
1	1	1X	-17.8	-18.5	-15.6	-15.4	-15.0	-16.1	-17.4	-20.6
3	1	1X								
3	1	19								
3	1	20	-14.0	-14.8	-15.1	-14.0	-15.2	-16.7	-19.0	-18.8
3	1	21	-19.8	-20.5	-23.1	-23.4	-23.7	-25.3	-26.6	-27.8
3	1	22								
2	1	10	-20.3	-22.2	-25.3	-25.9	-28.1	-30.4	-31.0	-33.0
2	1	13	-17.3	-19.7	-21.2	-21.1	-22.5	-23.9	-25.6	-27.2
2	1	14	-21.5	-22.8	-26.4	-25.6	-28.3	-30.6	-31.5	-30.8
2	1	15	-17.9	-20.8	-22.6	-22.8	-23.0	-23.7	-25.6	-24.2
2	1	17	-20.9	-22.8	-26.4	-25.7	-28.0	-29.5	-31.3	-29.4
2	1	2A	-18.4	-19.0	-19.7	-18.9	-18.6	-19.8	-21.9	-22.2
2	1	2X								
2	1	1X	-19.6	-19.8	-19.0	-18.2	-19.1	-17.8	-20.9	-21.9
4	1	2X	-20.1	-21.3	-25.1	-25.5	-27.6	-29.9	-30.4	-30.9
4	1	24								
4	1	25								
4	1	26	-20.2	-20.6	-23.4	-24.0	-24.5	-25.1	-27.1	-27.3
4	1	27								

\*\*\* MISSING DATA DELETED DUE TO EXCESSIVE ROLL AND DRIFT

1.6 GHZ SCATTEROMETER RETURN - HV POLARIZATION  
AUGUST 14, 1978

LOCATION			LOOK ANGLE (IN DEGREES)							
LINE	RUN	FLD	5	10	15	20	25	35	40	45
1	3	2	-21.3	-23.8	-23.8	-25.6	-27.6	-30.7	***	
1	3	4	-19.1	-21.6	-21.8	-23.1	-25.4	-25.4		
1	3	6	-18.1	-19.8	-19.4	-19.6	-20.5	-22.0		
1	3	7	-20.1	-23.2	-24.1	-24.8	-25.6	-27.9		
1	3	8	-19.8	-20.2	-20.6	-19.7	-20.2	-21.8		
1	3	1A	-19.4	-20.1	-19.8	-19.9	-20.1	-21.2		
1	3	2X	-20.0	-23.4	-23.2	-24.2	-25.5	-28.5		
1	3	1X	-20.0	-20.1	-18.4	-19.7	-19.5	-20.4		
3	3	1X								
3	3	19	-18.0	-18.5	-18.5	-18.1	-19.6	-20.4	-20.0	-21.7
3	3	20	-16.6	-17.8	-17.0	-16.9	-18.6	-19.4	-20.8	-20.6
3	3	21	-18.7	-21.0	-22.3	-22.1	-23.7	-26.8	-26.7	-29.1
3	3	22	-16.7	-21.0	-22.2	-21.1	-23.3	-26.0	-27.0	-28.4
2	3	10	-18.3	-21.7	-23.4	-24.0	-26.8	-29.8	-30.9	-32.1
2	3	13								
2	3	14								
2	3	15	-17.4	-20.6	-22.6	-23.0	-23.2	-26.1	-26.9	
2	3	17	-19.3	-23.6	-24.8	-25.3	-27.9	-30.6	-30.3	-31.8
2	3	2A	-18.0	-19.3	-19.9	-19.8	-19.3	-21.3	-22.4	-22.0
2	3	2X	-20.1	-23.9	-22.6	-23.4	-24.6	-26.2	-26.7	-29.8
2	3	1X	-19.2	-17.6	-14.9	-17.4	-18.5	-18.5	-22.2	-22.6
4	3	2X	-20.1	-22.4	-24.6	-24.5	-26.7	-29.4	-30.6	-29.7
4	3	24	-17.5	-19.2	-19.3	-18.7	-19.1	-20.1	-22.0	-22.4
4	3	25	-13.4	-14.2	-13.9	-13.8	-14.9	-16.5	-18.0	-18.1
4	3	26	-19.1	-20.5	-22.7	-22.3	-24.0	-25.1	-26.9	-26.7
4	3	27	-16.1	-19.9	-22.6	-23.7	-24.6	-27.5	-28.7	-29.0

\*\*\* MISSING DATA DELETED DUE TO EXCESSIVE ROLL AND DRIFT

1.6 GHZ SCATTEROMETER RETURN - HV POLARIZATION  
AUGUST 17, 1978

LOCATION			LOOK ANGLE (IN DEGREES)							
LINE	RUN	FLD	5	10	15	20	25	35	40	45
1	1	2	-16.0	-20.7	-24.0	-23.3	-27.2	-28.6	-29.8	-30.3
1	1	4	-15.0	-20.6	-23.6	-22.6	-28.0	-28.3	-29.3	-31.1
1	1	6	-15.9	-20.3	-23.9	-23.6	-26.9	-28.5	-29.6	-30.9
1	1	7	-16.7	-20.1	-22.7	-22.4	-23.9	-24.7	-24.4	-25.2
1	1	8	-16.0	-17.7	-18.4	-17.0	-18.4	-19.1	-20.0	-21.3
1	1	1A	-16.1	-19.5	-20.4	-19.0	-19.1	-20.5	-20.6	-21.3
1	1	2X	-16.6	-20.5	-21.1	-20.7	-18.7	-20.9	-22.2	-25.0
1	1	1X	-18.0	-18.4	-18.6	-18.1	-17.9	-18.8	-20.3	-20.3
3	1	1X	-16.1	-16.4	-14.6	-13.3	-13.4	-16.6	-18.3	-20.7
3	1	19	-17.0	-18.1	-18.0	-18.2	-18.9	-19.1	-20.7	-21.2
3	1	20	-14.0	-13.2	-13.3	-13.6	-14.3	-16.5	-17.6	-18.3
3	1	21	-18.2	-21.3	-21.8	-21.4	-23.0	***		
3	1	22	-18.1	-21.1	-22.6	-22.0	-23.8			
2	1	10	-16.3	-21.5	-24.7	-24.5	-27.2	-29.8	-30.9	-31.2
2	1	13	-14.1	-17.8	-20.4	-19.0	-21.5	-22.8	-25.3	-25.4
2	1	14	-16.9	-21.3	-25.3	-25.1	-28.5	-29.9	-30.4	-32.0
2	1	15	-16.4	-20.6	-24.2	-23.0	-24.7	-24.1	-25.8	-25.8
2	1	17	-17.5	-20.8	-24.8	-24.5	-27.2	-28.5	-29.0	-30.5
2	1	2A	-16.7	-19.8	-20.9	-19.9	-20.8	-21.6	-22.1	-23.4
2	1	2X	-17.9	-20.2	-19.6	-18.0	-19.7	-21.4	-20.7	-25.0
2	1	1X	-16.2	-18.9	-14.6	-15.5	-16.6	-17.9	-18.1	-20.0
4	1	2X	-20.4	-21.9	-23.1	-22.7	-23.5			
4	1	24	-17.0	-18.3	-18.6	-18.0	-16.7			
4	1	25	-16.7	-17.9	-18.2	-18.5	-18.8			
4	1	26	-19.0	-22.1	-22.9	-22.5	-23.6			
4	1	27	-18.9	-22.5	-24.6	-24.1	-27.7			

\*\*\* MISSING DATA DELETED DUE TO EXCESSIVE ROLL AND DRIFT

0.4 GHZ SCATTEROMETER RETURN - HH POLARIZATION  
AUGUST 2, 1978

LOCATION			LOOK ANGLE (IN DEGREES)							
LINE	RUN	FLD	5	10	15	20	25	35	40	45
1	1	2	-16.6	-21.2	-23.6	-25.0	-25.8	-33.5	***	
1	1	4	-15.4	-20.4	-24.6	-28.4	-32.9	-36.3		
1	1	6	-18.3	-21.0	-21.2	-21.9	-25.0	-31.2		
1	1	7	-16.0	-19.0	-23.5	-22.8	-26.3	-32.2		
1	1	8	-20.1	-23.6	-25.8	-27.2	-29.2	-34.5		
1	1	1A	-20.6	-24.1	-26.2	-29.0	-31.4	-35.6	-35.0	-34.1
1	1	2X	-18.8	-20.1	-23.3	-21.7	-25.2	-29.7		
1	1	1X	-15.9	-22.1	-24.0	-15.4	-25.0	-30.5		
3	1	1X	-13.1	-22.6	-22.6	-26.6	-28.7	-32.1	-31.2	-32.6
3	1	19	-16.0	-18.1	-16.8	-7.7	-20.4	-30.3	-30.6	-26.4
3	1	20	-11.1	-13.8	-9.2	-21.2	-21.1	-27.2	-26.9	-22.7
3	1	21	-15.7	-20.3	-23.3	-26.0	-28.3	-36.8	-36.5	-33.9
3	1	22	-7.6	-18.7	-23.0	-28.4	-30.7	-37.7	-37.4	-34.5
2	1	10	-13.9	-14.2	-19.0	-18.7	-22.6	-30.7	-30.8	
2	1	13	-16.4	-18.1	-19.6	-18.8	-18.9	-31.2	-27.1	
2	1	14	-12.9	-16.6	-20.5	-21.6	-22.7	-31.6	-32.5	
2	1	15	-13.5	-16.2	-17.7	-18.6	-22.0	-29.2	-30.0	
2	1	17	-16.0	-16.3	-16.2	-8.0	-22.5	-29.9	-29.3	-28.2
2	1	2A	-15.9	-22.6	-23.3	-25.0	-26.2	-31.5	-33.5	
2	1	2X	-14.5	-14.3	-19.1	-18.9	-22.8	-31.3	-30.5	
2	1	1X	-15.3	-19.6	-18.1	-2.8	-19.0	-30.8	-30.0	
4	1	2X	-16.3	-18.3	-21.2	-23.1	-24.7	-31.6	-29.9	-32.8
4	1	24	-16.2	-17.2	-18.2	-4.8	-22.1	-30.5	-30.7	-24.1
4	1	25	-15.1	-16.0	-10.5	-21.5	-20.8	-28.0	-28.0	-24.0
4	1	26	-16.1	-20.0	-23.7	-25.1	-28.5	-37.5	-37.7	-34.3
4	1	27	-1.8	-18.4	-23.6	-30.3	-31.6	-38.7	-39.7	-37.5
1	2	2	-16.7	-18.7	-19.8	-21.7	-23.5	-31.5	-32.6	
1	2	4	-9.8	-13.9	-19.2	-24.1	-28.0	-33.0	-29.9	
1	2	6	-12.8	-17.2	-19.8	-21.2	-21.7	-28.0	-31.5	
1	2	7	-13.8	-16.3	-18.9	-18.9	-24.9	-29.5	-29.6	
1	2	8	-16.4	-21.3	-22.7	-25.6	-26.3	-32.2	-30.8	-29.7
1	2	1A	-17.5	-20.7	-22.2	-25.1	-26.2	-31.3	-30.5	
1	2	2X	-12.2	-14.8	-19.3	-18.7	-20.0	-30.9	-27.3	
1	2	1X	-12.6	-16.9	-18.3	-7.1	-22.2	-29.3	-29.8	
3	2	1X	-14.1	-20.4	-20.7	-25.3	-29.0	-33.5	-33.4	-30.2
3	2	19	-13.5	-15.3	-15.3	-4.0	-16.1	-28.6	-29.3	-23.6
3	2	20	-10.3	-13.5	-7.8	-18.4	-18.3	-24.1	-25.0	-19.9
3	2	21	-10.6	-17.4	-21.1	-24.7	-26.5	-37.6	-38.9	-35.0
3	2	22	-9.9	-17.5	-21.6	-24.7	-26.7	-35.6	-34.2	-34.4
2	2	10	-12.4	-12.5	-14.1	-16.3	-20.9	-27.9	-28.1	-30.2
2	2	13	-10.1	-14.2	-18.9	-20.1	-20.6	-30.8	-30.3	-32.1
2	2	14	-10.0	-14.8	-20.3	-23.0	-24.5	-31.8	-32.2	-34.2
2	2	15	-11.7	-13.7	-16.7	-18.7	-18.8	-24.8	-28.9	
2	2	17	-15.2	-16.0	-16.5	-14.8	-21.9	-30.1	-32.5	
2	2	2A	-16.3	-19.3	-22.4	-24.3	-27.6	-32.4	-33.1	
2	2	2X	-10.4	-13.0	-18.4	-16.6	-21.8	-29.7	-29.2	-29.8
2	2	1X	-15.2	-16.4	-14.7	-1.0	-17.1	-30.1	-29.8	-28.5
4	2	2X	-14.1	-17.8	-21.0	-23.0	-23.4	-32.0	-31.3	-32.0
4	2	24	-13.5	-15.0	-14.3	-3.5	-18.0	-30.0	-27.1	-23.5
4	2	25	-13.8	-14.9	-9.0	-19.6	-19.3	-25.6	-25.8	-21.4
4	2	26	-12.4	-17.5	-20.9	-24.4	-27.4	-35.0	-35.6	-34.1
4	2	27	-5.5	-17.1	-20.6	-24.5	-29.3	-36.9	-36.9	-40.7

\*\*\* MISSING DATA DELETED DUE TO EXCESSIVE ROLL AND DRIFT

0.4 GHZ SCATTEROMETER RETURN - HH POLARIZATION  
AUGUST 5, 1978

LOCATION			LOOK ANGLE (IN DEGREES)							
LINE	RUN	FLD	5	10	15	20	25	35	40	45
1	1	2	-12.6	-17.5	-21.4	-24.4	-26.9	-35.4	***	
1	1	4	-16.0	-21.1	-24.9	-28.7	-32.5	-40.5	-39.5	-39.5
1	1	6	-13.6	-18.0	-21.3	-25.3	-28.2	-37.5	-37.1	-38.2
1	1	7	-15.2	-20.4	-23.3	-24.1	-27.5	-34.7	-36.6	-37.2
1	1	8	-17.2	-22.6	-27.0	-28.1	-31.4	-36.4	-36.2	-36.0
1	1	1A	-19.9	-22.6	-25.7	-28.0	-30.7	-34.1	-34.9	-35.7
1	1	2X	-14.1	-15.1	-21.7	-22.5	-23.6	-32.6	-30.5	-31.1
1	1	1X	-16.4	-17.7	-18.2	-6.0	-22.0	-27.3	-28.2	-24.7
3	1	1X	-17.8	-24.0	-25.9	-22.5	-27.2	-35.8	-33.6	-33.8
3	1	19	-16.1	-17.9	-17.4	-3.0	-20.3	-28.3	-30.4	-21.8
3	1	20	-10.5	-13.9	-8.4	-19.6	-21.3	-25.7	-26.1	-22.6
3	1	21	-18.3	-20.6	-24.2	-27.3	-29.1	-37.0	-37.1	-36.8
3	1	22	-1.9	-14.9	-22.0	-26.8	-30.3	-33.0	-33.7	-34.0
2	1	10	-10.1	-12.3	-17.9	-20.6	-24.3	-30.8	-32.4	-32.2
2	1	13	-15.0	-18.1	-20.7	-24.4	-26.2	-34.3	-35.3	-34.9
2	1	14	-13.2	-17.8	-21.3	-25.9	-27.7	-35.4	-36.3	-36.0
2	1	15	-12.7	-17.4	-21.3	-23.7	-27.8	-33.6	-35.6	-33.3
2	1	17	-15.0	-18.3	-20.1	-18.6	-25.7	-35.4	-35.1	-32.2
2	1	2A	-18.9	-22.2	-22.5	-26.1	-26.6	-32.3	-32.8	-34.5
2	1	2X	-14.2	-14.5	-21.9	-21.5	-23.1	-30.7	-30.6	-30.1
2	1	1X	-18.0	-18.5	-16.9	-5.4	-25.8	-32.3	-31.2	-23.8
4	1	2X	-7.7	-15.4	-21.0	-23.2	-25.3	-33.8		
4	1	24	-9.2	-11.5	-14.9	-9.4	-11.9	-27.3	-27.5	-27.7
4	1	25	-5.8	-11.1	-2.5	-18.7	-21.6	-29.8	-26.5	-28.3
4	1	26	-4.0	-16.7	-22.7	-27.9	-30.2	-38.2	-37.4	-36.4
4	1	27	-2.5	-9.3	-15.9	-18.0	-25.5	-33.8	-34.6	-33.8
1	2	2	-11.2	-16.1	-20.3	-23.4	-24.5	-34.7	-34.9	-34.0
1	2	4	-14.0	-18.2	-22.9	-26.2	-31.0	-37.7	-36.4	-37.6
1	2	6	-10.8	-17.0	-21.6	-24.7	-26.7	-35.2	-36.2	-36.5
1	2	7	-13.1	-18.3	-20.4	-23.7	-29.3	-35.8	-37.2	-39.9
1	2	8	-14.5	-20.8	-23.6	-27.1	-30.8	-34.6	-34.3	-33.8
1	2	1A	-19.0	-22.4	-24.0	-25.9	-27.5	-33.8	-33.2	-32.8
1	2	2X	-14.5	-16.4	-19.4	-18.7	-21.9	-27.3	-26.7	-28.6
1	2	1X	-16.2	-19.5	-17.5	-6.1	-20.1	-26.4	-27.7	-24.4
3	2	1X	-19.4	-23.1	-21.6	-23.4	-27.3	-34.2	-33.8	-32.7
3	2	19	-17.8	-17.3	-16.3	-5.8	-21.1	-29.9	-28.2	-24.5
3	2	20	-10.3	-14.2	-10.7	-20.1	-21.5	-26.7	-26.0	-21.0
3	2	21	-15.6	-19.3	-23.4	-26.2	-27.0	-34.5	-36.5	-33.8
3	2	22	-2.9	-16.7	-24.1	-27.2	-30.3	-35.9	-36.7	-36.3
2	2	10	-11.1	-12.0	-16.1	-20.6	-24.0	-33.5	-33.9	-33.5
2	2	13	-14.5	-18.4	-22.0	-25.5	-21.8	-34.5	-34.2	-34.7
2	2	14	-11.5	-11.6	-19.9	-24.0	-27.9	-36.3	-37.6	-38.8
2	2	15	-14.2	-17.3	-21.6	-23.0	-27.0	-34.8	-34.6	-32.2
2	2	17	-14.6	-18.7	-19.1	-18.1	-25.0	-34.4	-36.0	-34.3
2	2	2A	-17.3	-21.8	-25.2	-26.3	-28.3	-33.9	-32.5	-35.7
2	2	2X	-13.8	-17.1	-19.8	-21.3	-23.5	-30.9		
2	2	1X	-19.6	-22.6	-22.0	-7.0	-23.6	-33.0	-30.2	-27.3
4	2	2X	-14.9	-18.1	-22.8	-25.2	-26.8	-33.0		
4	2	24	-15.0	-15.9	-18.0	-5.6	-20.4	-27.9	-28.4	-21.1
4	2	25	-16.1	-2.9	-10.5	-23.9	-23.5	-26.5	-25.7	-25.4
4	2	26	-12.2	-20.1	-23.4	-27.3	-30.1	-37.9	-36.2	-34.5
4	2	27	0.8	-13.0	-16.0	-19.4	-25.4	-28.2	-29.8	-32.0

\*\*\* MISSING DATA DELETED DUE TO EXCESSIVE ROLL AND DRIFT

0.4 GHZ SCATTEROMETER RETURN - HH POLARIZATION  
AUGUST 8, 1978

LOCATION			LOOK ANGLE (IN DEGREES)							
LINE	RUN	FLD	5	10	15	20	25	35	40	45
1	1	2	-13.9	-17.6	-20.7	-22.1	-23.0	-31.6	-32.7	-34.9
1	1	4	-11.0	-19.6	-24.1	-28.0	-31.9	-37.2	-37.1	-37.3
1	1	6	-10.7	-17.5	-21.2	-24.5	-28.0	-34.8	-35.3	-35.8
1	1	7	-11.4	-17.1	-20.4	-21.2	-23.0	-34.3	-34.8	-35.4
1	1	8	-15.7	-20.0	-24.6	-25.3	-28.8	-34.6	-33.7	-33.5
1	1	1A	-16.4	-20.4	-22.4	-24.4	-25.8	-32.4	-32.7	-33.0
1	1	2X	-11.1	-11.4	-19.0	-20.2	-22.3	-29.3	-27.2	-24.8
1	1	1X	-12.0	-16.1	-15.4	-2.2	-17.7	-27.0	-25.5	-26.5
3	1	1X	-15.1	-18.7	-21.4	-24.9	-28.4	-34.6	-32.2	-32.0
3	1	19	-13.0	-13.8	-14.0	-2.2	-14.6	-28.3	-28.0	-26.5
3	1	20	-9.6	-13.1	-7.3	-16.6	-19.9	-26.3	-26.7	-21.2
3	1	21	-15.4	-18.8	-21.6	-24.0	-27.0	-32.5	-35.2	-31.7
3	1	22	-5.1	-13.5	-20.9	-22.6	-20.8	-31.5	-29.7	-30.4
2	1	10	-12.6	-12.3	-17.4	-19.2	-23.5	-32.3	-32.8	-32.9
2	1	13	-13.4	-17.6	-20.4	-22.5	-17.2	-30.5	-33.3	-31.5
2	1	14	-13.2	-17.1	-21.8	-25.0	-27.5	-35.4	-35.7	-35.7
2	1	15	-13.5	-17.2	-21.3	-23.1	-28.1	-31.2	-31.3	-32.1
2	1	17	***							
2	1	2A	-15.9	-19.1	-23.4	-24.3	-25.8	-30.3	-31.1	-31.4
2	1	2X	-10.0	-12.9	-19.1	-21.4	-24.8	-31.7	-29.9	-27.1
2	1	1X								
4	1	2X	-11.9	-17.1	-21.9	-23.9	-25.8	-34.4	-33.1	-33.2
4	1	24	-12.5	-13.0	-12.8	0.3	-16.5	-26.8	-27.4	-23.2
4	1	25	-10.0	-13.3	-7.5	-17.2	-18.1	-25.0	-26.7	-20.8
4	1	26								
4	1	27	-4.0	-13.9	-20.2	-24.9	-29.1	-33.1	-34.4	-33.4
1	2	2								
1	2	4	-12.3	-16.7	-22.4	-25.7	-29.4	-34.2	-34.2	-34.6
1	2	6								
1	2	7								
1	2	8	-18.8	-22.2	-24.3	-26.2	-28.6	-34.7	-32.4	-32.4
1	2	1A	-16.1	-21.6	-24.0	-26.3	-28.6	-32.4	-32.2	-31.9
1	2	2X	-11.8	-11.3	-18.0	-20.1	-21.5	-29.2	-25.5	-27.5
1	2	1X	-9.2	-13.2	-16.0	-2.4	-14.5	-26.1	-24.4	-24.7
3	2	1X	-15.8	-19.4	-22.8	-24.7	-26.7	-34.4	-33.5	-32.3
3	2	19	-11.2	-12.6	-12.5	1.2	-14.7	-25.7	-25.2	-18.3
3	2	20	-10.0	-9.6	-5.3	-15.3	-18.2	-23.2	-23.6	-20.1
3	2	21	-13.4	-15.7	-19.5	-21.1	-25.5	-32.9	-31.4	-30.7
3	2	22	1.7	-10.7	-18.2	-18.8	-21.9	-22.9	-23.7	-27.5
2	2	10	-9.9	-12.1	-17.0	-18.1	-24.1	-30.5	-30.7	-31.6
2	2	13	-12.2	-16.4	-19.6	-21.3	-20.4	-30.7	-30.6	-30.8
2	2	14	-11.6	-16.0	-20.2	-24.2	-25.3	-34.6	-34.6	-35.1
2	2	15	-13.4	-17.1	-21.6	-23.4	-25.4	-31.7	-30.6	-33.0
2	2	17	-14.4	-16.6	-19.8	-16.9	-22.2	-32.9	-34.5	-34.0
2	2	2A								
2	2	2X	-10.4	-13.1	-18.3	-18.1	-19.8	-28.6	-26.4	-26.6
2	2	1X	-15.6	-16.4	-12.6	-0.3	-19.5	-27.9	-27.4	-17.4
4	2	2X	-12.6	-17.8	-21.7	-23.5	-24.4	-33.4	-30.7	-32.5
4	2	24	-10.3	-12.4	-12.5	0.5	-17.0	-26.6	-26.6	-17.1
4	2	25	-13.2	-14.0	-6.8	-18.3	-19.8	-23.0	-24.3	-21.4
4	2	26	-14.5	-17.2	-20.5	-23.6	-25.4	-33.2	-30.6	-33.3
4	2	27	-4.0	-16.0	-22.1	-26.3	-29.1	-35.1	-33.4	-31.2

\*\*\* MISSING DATA DELETED DUE TO EXCESSIVE ROLL AND DRIFT



0.4 GHZ SCATTEROMETER RETURN - HH POLARIZATION  
AUGUST 11, 1978

LOCATION			LOOK ANGLE (IN DEGREES)							
LINE	RUN	FLD	5	10	15	20	25	35	40	45
1	1	2	-12.4	-16.1	-18.7	-20.1	-21.4	-30.0	-28.8	-31.9
1	1	4	-16.2	-20.6	-24.1	-26.0	-28.3	-33.2	-33.1	-33.9
1	1	6	***							
1	1	7	-7.5	-20.6	-24.5	-24.9	-26.8	-33.2	-33.6	-36.2
1	1	8								
1	1	1A	-17.9	-20.0	-22.7	-23.2	-25.0	-30.4	-29.7	-31.3
1	1	2X								
1	1	1X	-16.0	-15.9	-16.9	-3.7	-20.0	-25.1	-24.8	-19.7
3	1	1X								
3	1	19								
3	1	20	-6.0	-10.0	-4.9	-13.7	-15.4	-22.2	-22.8	-20.3
3	1	21	-13.0	-15.0	-18.1	-20.7	-23.0	-29.2	-29.0	-28.6
3	1	22								
2	1	10	-10.7	-11.9	-15.2	-17.2	-21.5	-28.3	-29.0	-30.4
2	1	13	-12.4	-17.6	-20.1	-23.2	-20.3	-31.6	-30.4	-29.6
2	1	14	-13.0	-17.1	-20.8	-24.7	-24.9	-33.5	-34.5	-34.1
2	1	15	-13.6	-17.2	-20.6	-21.5	-24.3	-29.4	-29.2	-31.4
2	1	17	-16.7	-17.8	-20.2	-15.4	-22.6	-30.9	-30.0	-30.2
2	1	2A	-15.3	-20.3	-24.1	-24.5	-25.8	-30.9	-30.9	-30.3
2	1	2X								
2	1	1X	-19.5	-20.0	-18.0	-6.2	-20.0	-28.9	-29.1	-24.2
4	1	2X	-12.8	-16.2	-19.8	-20.1	-21.0	-30.6	-27.9	-29.6
4	1	24								
4	1	25								
4	1	26	-14.5	-15.7	-20.7	-22.6	-24.0	-31.7	-32.0	-29.8
4	1	27								
1	2	2	-9.0	-14.4	-17.8	-19.0	-20.4	-28.2	-29.8	-31.2
1	2	4								
1	2	6								
1	2	7								
1	2	8	-15.3	-19.3	-22.2	-23.9	-24.8	-31.0	-30.3	-30.2
1	2	1A								
1	2	2X	-12.5	-14.1	-18.6	-16.3	-17.9	-26.5	-23.8	-26.6
1	2	1X	-15.8	-15.6	-15.2	-2.4	-16.3	-24.0	-25.1	-23.5
3	2	1X	-11.9	-17.2	-18.7	-19.4	-22.1	-30.0	-29.5	-30.3
3	2	19	-10.8	-12.1	-12.7	1.4	-16.3	-23.8	-23.5	-18.8
3	2	20	-9.7	-9.6	-5.9	-14.9	-15.3	-21.7	-23.3	-20.1
3	2	21	-12.0	-16.6	-19.7	-22.6	-24.4	-31.2	-29.7	-28.1
3	2	22								
2	2	10	-10.0	-12.4	-17.5	-17.4	-22.5	-28.7	-31.8	
2	2	13	-9.4	-14.8	-18.6	-20.0	-19.4	-28.4	-30.5	-26.9
2	2	14	-12.8	-16.0	-20.9	-23.3	-24.9	-34.4	-32.9	-33.6
2	2	15	-9.8	-14.7	-18.4	-20.0	-23.0	-27.4	-30.3	-29.2
2	2	17	-14.5	-16.0	-17.0	-14.1	-19.6	-29.9	-30.2	-31.8
2	2	2A								
2	2	2X								
2	2	1X	-13.4	-16.5	-17.8	-1.3	-16.8	-29.1	-29.5	-19.5
4	2	2X	-16.1	-18.4	-20.4	-20.3	-20.5	-28.2	-27.7	-31.2
4	2	24								
4	2	25	-12.9	-13.2	-9.9	-18.0	-18.0	-24.9	-24.2	-17.9
4	2	26								
4	2	27								

\*\*\* MISSING DATA DELETED DUE TO EXCESSIVE ROLL AND DRIFT

0.4 GHZ SCATTEROMETER RETURN - HH POLARIZATION  
AUGUST 14, 1978

LOCATION			LOOK ANGLE (IN DEGREES)							
LINE	RUN	FLD	5	10	15	20	25	35	40	45
1	2	2	-14.9	-17.3	-19.8	-20.8	-21.2	-29.7	-32.2	-33.0
1	2	4	***							
1	2	6	-11.7	-17.0	-21.5	-25.2	-26.3	-32.4	-32.8	-34.4
1	2	7	-15.1	-18.2	-21.1	-22.5	-25.4	-29.8	-31.8	-34.1
1	2	8	-17.1	-20.8	-24.1	-26.2	-28.6	-31.2	-31.5	-31.6
1	2	1A	-18.2	-21.9	-23.0	-26.1	-28.4	-30.3	-32.2	-31.0
1	2	2X	-16.9	-17.8	-21.6	-21.6	-23.6	-29.5	-30.3	-28.8
1	2	1X	-14.5	-19.4	-21.9	-9.6	-23.0	-28.9	-27.4	-23.8
3	2	1X	-14.8	-16.6	-20.0	-21.2	-21.7	-26.4	-31.4	-29.9
3	2	19	-10.9	-12.2	-11.2	-1.3	-14.7	-25.1		
3	2	20	-9.8	-11.3	-5.4	-15.2	-18.1	-23.2	-24.4	-21.6
3	2	21	-12.6	-14.8	-18.8	-22.4	-24.7	-31.5	-31.6	-28.7
3	2	22	-7.2	-15.3	-16.6	-20.9	-22.7	-28.6	-29.2	-30.6
2	2	10	-11.2	-10.8	-14.3	-16.8	-21.7	-27.6		
2	2	13	-10.4	-16.7	-21.0	-26.0	-26.5	-33.1	-33.1	
2	2	14	-11.3	-15.9	-21.7	-23.9	-24.1	-31.5	-31.4	-32.6
2	2	15	-13.6	-17.4	-20.6	-21.3	-24.0	-30.3	-30.5	-31.3
2	2	17	-17.5	-19.0	-18.5	-17.3	-23.9	-32.9	-31.9	-29.8
2	2	2A	-13.2	-18.8	-21.9	-24.6	-26.9	-29.8	-30.1	-30.1
2	2	2X	-12.1	-13.3	-19.9	-20.6	-22.1	-30.6	-28.0	-28.3
2	2	1X	-20.6	-22.3	-16.0	-6.1	-23.4	-33.2	-31.4	-25.2
4	2	2X	-12.1	-16.3	-19.9	-21.7	-23.2	-32.7	-28.3	-29.4
4	2	24	-10.3	-11.6	-11.1	1.3	-15.4	-25.9	-26.9	-19.3
4	2	25	-9.9	-11.6	-4.4	-15.9	-16.0	-23.4	-22.5	-18.3
4	2	26	-11.7	-15.8	-19.2	-22.9	-24.2	-30.7	-30.4	-27.6
4	2	27	-4.3	-12.4	-18.3	-23.6	-27.9	-31.3	-33.1	-30.9
1	3	2	-13.2	-17.0	-18.9	-20.4	-22.0	-29.1		
1	3	4	-11.5	-17.3	-21.9	-25.7	-29.1	-34.9		
1	3	6	-11.0	-16.3	-18.8	-22.3	-23.9	-32.1		
1	3	7	-10.7	-15.4	-17.3	-18.7	-23.5	-31.2		
1	3	8	-15.5	-20.3	-22.2	-23.8	-25.6	-30.9		
1	3	1A	-15.4	-19.8	-21.6	-25.3	-25.3	-29.9		
1	3	2X	-12.2	-15.4	-18.3	-20.2	-20.4	-27.3		
1	3	1X	-15.7	-15.7	-14.6	-5.4	-19.1	-26.5		
3	3	1X								
3	3	19	-9.5	-10.9	-12.1	0.1	-13.1	-23.2	-24.2	-14.7
3	3	20	-7.0	-12.3	-5.1	-15.8	-18.8	-23.9	-24.6	-22.3
3	3	21	-12.1	-14.1	-17.9	-21.6	-21.7	-30.1	-30.6	-28.9
3	3	22	-0.2	-12.3	-17.2	-20.2	-25.1	-29.0	-29.8	-29.5
2	3	10	-8.8	-10.9	-14.6	-18.1	-20.8	-29.9	-31.7	-31.4
2	3	13								
2	3	14								
2	3	15	-8.3	-15.5	-19.2	-21.1	-23.3	-30.6	-30.7	
2	3	17	-13.9	-17.4	-15.5	-14.9	-23.1	-30.5	-30.6	-31.1
2	3	2A	-11.1	-17.8	-21.0	-23.4	-25.8	-30.3	-29.7	-28.7
2	3	2X	-12.2	-15.2	-19.0	-14.5	-19.9	-26.9	-26.9	-27.6
2	3	1X	-16.3	-20.1	-18.4	-3.7	-19.7	-29.3	-29.3	-22.0
4	3	2X	-13.3	-15.6	-18.0	-20.9	-20.9	-29.3	-28.0	-30.8
4	3	24	-10.4	-11.7	-11.6	-0.3	-15.8	-26.5	-25.9	-18.4
4	3	25	-6.3	-10.1	-3.7	-14.4	-14.7	-21.5	-23.3	-16.4
4	3	26	-10.4	-14.7	-18.5	-21.6	-23.7	-31.7	-32.5	-29.0
4	3	27	2.3	-11.9	-17.9	-21.6	-25.6	-29.9	-31.9	-31.4

\*\*\* MISSING DATA DELETED DUE TO EXCESSIVE ROLL AND DRIFT

0.4 GHZ SCATTEROMETER RETURN - HH POLARIZATION  
AUGUST 17, 1978

LOCATION			LOOK ANGLE (IN DEGREES)							
LINE	RUN	FLD	5	10	15	20	25	35	40	45
1	1	2	-14.2	-16.3	-18.6	-19.2	-20.5	-29.8	-31.1	-33.7
1	1	4	-11.0	-16.6	-21.0	-23.9	-28.1	-33.3	-35.0	-36.2
1	1	6	-10.2	-16.1	-20.1	-22.5	-23.1	-31.8	-32.5	-34.5
1	1	7	-13.1	-15.6	-19.3	-17.9	-21.6	-30.1	-31.1	-33.0
1	1	8	-15.7	-20.1	-23.0	-24.7	-28.1	-31.0	-31.9	-31.1
1	1	1A	-16.9	-22.0	-23.4	-24.7	-27.1	-32.8	-31.0	-31.4
1	1	2X	-16.1	-16.0	-15.3	-0.8	-18.7	-30.1	-27.5	-21.2
1	1	1X	-18.0	-18.5	-18.9	-6.2	-19.8	-28.5	-27.7	-24.2
3	1	1X	-10.2	-16.2	-21.3	-24.8	-27.8	-33.5	-32.7	-32.3
3	1	19	-12.4	-14.0	-14.5	-0.6	-14.9	-25.7	-27.7	-23.5
3	1	20	-10.0	-11.7	-5.5	-15.9	-15.6	-23.6	-24.1	-23.0
3	1	21	-14.6	-17.5	-18.0	-22.1	-24.3	***		
3	1	22	-1.0	-11.6	-17.3	-18.6	-21.0			
2	1	10	-11.6	-11.4	-16.4	-16.8	-19.6	-27.2	-28.5	-31.1
2	1	13	-11.8	-15.5	-20.9	-21.8	-22.5	-31.5	-30.4	-32.3
2	1	14	-12.6	-16.1	-19.8	-21.7	-24.2	-32.3	-33.4	-33.8
2	1	15	-12.5	-13.7	-18.4	-17.2	-20.8	-29.3	-29.6	-31.0
2	1	17	-15.2	-15.1	-18.4	-14.4	-21.5	-30.2	-32.5	-31.8
2	1	2A	-15.6	-19.6	-21.4	-23.4	-26.0	-31.0	-29.8	-30.7
2	1	2X	-15.5	-15.2	-13.9	-0.2	-16.3	-25.5	-26.6	-18.1
2	1	1X	-15.0	-16.2	-15.7	-1.6	-20.0	-29.5	-26.6	-21.8
4	1	2X	-16.6	-19.1	-19.9	-23.0	-24.3			
4	1	24	-11.3	-12.0	-13.1	-0.9	-13.0			
4	1	25	-12.0	-12.8	-6.3	-17.4	-18.5			
4	1	26	-13.3	-18.1	-19.4	-23.1	-23.4			
4	1	27	-3.6	-15.4	-20.7	-25.3	-27.8			
1	2	2	-12.4	-15.1	-18.6	-19.4	-19.6	-28.9	-30.7	-32.8
1	2	4	-9.5	-14.2	-18.6	-22.0	-25.1	-33.2	-35.2	-36.5
1	2	6	-10.7	-15.4	-18.8	-20.1	-22.1	-30.4	-32.7	-33.7
1	2	7	-11.6	-14.7	-18.4	-16.1	-20.3	-27.9	-29.9	-31.8
1	2	8	-14.9	-19.5	-23.6	-23.7	-27.3	-31.1	-32.6	-30.7
1	2	1A	-17.0	-19.6	-21.3	-22.7	-26.1	-30.3	-30.2	-29.6
1	2	2X	-16.4	-15.3	-11.6	0.4	-9.3	-27.4	-25.9	-13.0
1	2	1X	-16.0	-16.9	-16.6	-4.7	-22.6	-26.5	-26.6	-21.8
3	2	1X	-16.1	-17.6	-18.9	-10.5	-25.8	-30.0		
3	2	19	-12.5	-13.0	-12.5	-0.5	-13.6	-24.8		
3	2	20	-10.9	-11.1	-5.9	-15.3	-16.4	-23.8		
3	2	21								
3	2	22								
2	2	10	-10.2	-10.7	-13.5	-14.8	-19.9	-28.6	-29.3	-29.8
2	2	13	-9.5	-16.0	-19.5	-21.2	-21.0	-30.8	-31.5	-34.4
2	2	14	-12.5	-15.8	-19.3	-21.6	-24.4	-31.1	-32.5	-34.7
2	2	15	-12.8	-15.7	-19.4	-17.8	-23.7	-28.2	-29.1	-29.6
2	2	17	-13.9	-14.8	-16.6	-13.1	-21.3	-30.3	-30.3	-29.2
2	2	2A	-14.4	-18.2	-21.0	-21.9	-24.6	-30.8	-31.0	-31.0
2	2	2X	-16.8	-15.1	-13.8	0.6	-15.5	-26.9	-26.9	-16.3
2	2	1X	-15.4	-16.2	-15.4	-1.4	-17.6	-27.9	-28.9	-18.4
4	2	2X	-15.5	-19.2	-22.3	-22.7	-25.0	-31.5	-32.8	
4	2	24	-12.5	-12.9	-12.4	-1.0	-16.3	-25.9	-26.8	
4	2	25	-12.4	-13.6	-7.1	-18.1	-17.7	-24.7	-24.0	
4	2	26	-13.5	-17.5	-21.5	-25.6	-24.7	-30.8	-32.4	-28.2
4	2	27	-2.9	-14.4	-19.6	-25.4	-28.1	-35.3	-36.9	-36.3

\*\*\* MISSING DATA DELETED DUE TO EXCESSIVE ROLL AND DRIFT

0.4 GHZ SCATTEROMETER RETURN - HV POLARIZATION  
AUGUST 2, 1978

LOCATION			LOOK ANGLE (IN DEGREES)								
LINE	RUN	FLD	5	10	15	20	25	35	40	45	
1	1	2	-25.0	-32.2	-37.1	-40.4	-42.1	-50.0	***		
1	1	4	-25.8	-27.1	-32.0	-35.1	-41.3	-45.0			
1	1	6	-25.8	-30.0	-34.5	-37.3	-41.1	-46.6			
1	1	7	-26.3	-29.4	-33.4	-37.2	-40.1	-48.5			
1	1	8	-28.5	-32.8	-32.7	-31.9	-33.8	-34.9			
1	1	1A	-29.8	-33.1	-35.2	-35.8	-38.7	-39.6	-38.7	-38.0	
1	1	2X	-31.0	-32.4	-36.1	-37.9	-41.3	-46.9			
1	1	1X	-26.6	-32.8	-34.2	-28.4	-36.4	-40.6			
3	1	1X	-24.4	-30.8	-33.2	-33.4	-33.6	-34.6	-34.1	-35.4	
3	1	19	-26.2	-31.0	-34.1	-27.1	-37.5	-41.7	-42.3	-35.8	
3	1	20	-24.6	-27.8	-30.1	-32.4	-35.2	-38.1	-38.6	-34.5	
3	1	21	-26.2	-30.4	-35.5	-39.3	-42.3	-47.0	-48.6	-45.8	
3	1	22	-22.0	-26.1	-29.6	-33.4	-40.6	-46.7	-46.9	-45.8	
2	1	10	-25.0	-28.0	-33.8	-37.7	-41.2	-49.0	-47.8		
2	1	13	-22.1	-23.4	-27.3	-30.3	-33.0	-40.9	-36.4		
2	1	14	-26.1	-27.9	-32.8	-34.2	-37.3	-43.6	-44.1		
2	1	15	-26.8	-29.4	-31.6	-34.3	-37.5	-44.9	-41.8		
2	1	17	-26.6	-26.8	-31.6	-30.6	-42.4	-46.9	-47.6	-42.3	
2	1	2A	-25.4	-31.5	-35.1	-36.0	-38.2	-39.9	-40.4		
2	1	2X	-28.3	-28.8	-33.8	-36.2	-40.0	-47.1	-44.5		
2	1	1X	-27.8	-31.2	-30.1	-17.8	-31.0	-39.9	-38.3		
4	1	2X	-27.5	-28.7	-37.8	-40.0	-43.6	-47.8	-49.4	-48.9	
4	1	24	-30.0	-31.1	-34.9	-24.9	-39.4	-45.2	-43.4	-38.9	
4	1	25	-27.4	-29.2	-30.0	-32.3	-36.9	-42.8	-41.5	-36.4	
4	1	26	-30.3	-32.4	-38.1	-39.7	-41.8	-50.4	-49.4	-48.8	
4	1	27	-16.5	-29.4	-36.1	-40.6	-45.6	-50.9	-49.5	-49.5	
1	2	2	-28.4	-32.2	-36.2	-39.0	-42.3	-50.6	-49.6		
1	2	4	-23.5	-26.8	-33.5	-37.2	-40.3	-45.7	-42.3		
1	2	6	-23.7	-30.1	-33.2	-35.9	-38.7	-43.0	-44.9		
1	2	7	-26.5	-28.5	-33.9	-35.9	-40.2	-47.6	-44.8		
1	2	8	-28.8	-32.0	-31.1	-30.6	-31.7	-34.7	-35.4	-34.2	
1	2	1A	-26.9	-29.6	-32.7	-33.9	-34.7	-37.3	-37.2		
1	2	2X	-25.7	-26.9	-30.6	-35.1	-37.3	-44.0	-42.9		
1	2	1X	-26.8	-30.0	-31.7	-21.1	-34.9	-39.6	-39.1		
3	2	1X	-29.0	-31.4	-30.9	-31.4	-30.4	-32.1	-34.1	-32.9	
3	2	19	-28.3	-30.7	-34.0	-25.4	-35.8	-42.7	-40.3	-34.9	
3	2	20	-23.6	-26.5	-29.7	-31.8	-31.7	-37.4	-37.3	-32.9	
3	2	21	-24.8	-28.1	-33.3	-38.3	-40.1	-48.0	-49.7	-46.8	
3	2	22	-23.5	-26.4	-29.9	-34.3	-39.5	-45.9	-45.8	-46.2	
2	2	10	-23.7	-27.4	-33.2	-36.1	-41.2	-46.6	-46.6	-46.8	
2	2	13	-18.9	-22.8	-28.1	-30.5	-35.0	-42.0	-41.6	-43.0	
2	2	14	-23.8	-27.8	-32.8	-34.1	-38.7	-45.4	-47.1	-47.6	
2	2	15	-26.7	-28.8	-31.7	-34.6	-39.1	-42.1	-40.8		
2	2	17	-26.2	-24.9	-28.3	-33.1	-40.2	-49.6	-48.8		
2	2	2A	-28.4	-32.6	-35.9	-35.8	-39.1	-42.2	-42.1		
2	2	2X	-28.2	-28.9	-33.5	-35.7	-39.8	-47.5	-43.7	-44.6	
2	2	1X	-27.9	-30.8	-29.8	-18.7	-31.7	-40.2	-38.2	-37.4	
4	2	2X	-24.9	-26.4	-34.4	-39.1	-42.0	-46.2	-46.8	-45.4	
4	2	24	-28.3	-30.4	-33.3	-23.4	-35.8	-43.4	-41.7	-36.8	
4	2	25	-24.8	-27.3	-27.6	-31.3	-33.4	-40.4	-39.9	-33.2	
4	2	26	-26.8	-30.4	-34.4	-37.4	-40.4	-49.6	-49.5	-47.9	
4	2	27	-18.6	-27.3	-35.8	-37.9	-42.5	-48.9	-49.1	-46.7	

\*\*\* MISSING DATA DELETED DUE TO EXCESSIVE ROLL AND DRIFT

0.4 GHZ SCATTEROMETER RETURN - HV POLARIZATION  
AUGUST 5, 1978

LOCATION			LOOK ANGLE (IN DEGREES)							
LINE	RUN	FLD	5	10	15	20	25	35	40	45
1	1	2	-25.7	-28.6	-33.3	-35.3	-38.7	-47.2	***	
1	1	4	-26.9	-29.8	-35.2	-40.1	-45.2	-50.3	-48.3	-49.6
1	1	6	-24.4	-28.7	-34.4	-36.4	-40.6	-48.6	-49.4	-47.7
1	1	7	-28.0	-31.2	-35.1	-36.4	-41.4	-48.5	-48.8	-48.5
1	1	8	-28.4	-32.8	-35.0	-35.7	-37.2	-39.6	-36.7	-36.6
1	1	1A	-29.7	-33.6	-37.5	-36.9	-40.1	-41.6	-40.9	-41.2
1	1	2X	-31.5	-34.7	-37.4	-39.2	-41.0	-50.0	-46.5	-45.7
1	1	1X	-29.7	-32.0	-30.2	-18.1	-35.3	-39.1	-36.8	-34.0
3	1	1X	-29.4	-31.9	-33.2	-32.9	-33.3	-37.1	-35.7	-35.3
3	1	19	-28.4	-31.5	-34.7	-25.1	-36.6	-44.1	-41.7	-35.5
3	1	20	-24.8	-26.4	-26.2	-31.6	-33.4	-40.6	-40.1	-35.8
3	1	21	-30.3	-31.8	-36.6	-39.9	-41.8	-49.9	-50.2	-48.2
3	1	22	-21.2	-24.7	-29.3	-35.7	-40.9	-48.3	-46.0	-47.0
2	1	10	-23.5	-25.1	-31.3	-34.1	-39.2	-46.7	-48.2	-47.3
2	1	13	-23.3	-25.4	-29.8	-31.8	-37.3	-46.1	-43.7	-44.6
2	1	14	-24.0	-28.4	-31.7	-35.6	-39.2	-47.2	-47.8	-47.2
2	1	15	-26.5	-27.2	-33.5	-34.7	-38.5	-45.5	-47.1	-44.7
2	1	17	-28.0	-26.5	-33.9	-34.3	-40.4	-50.2	-50.5	-49.2
2	1	2A	-27.2	-31.7	-33.3	-35.7	-36.9	-38.6	-39.1	-38.1
2	1	2X	-29.7	-30.8	-35.6	-36.7	-41.7	-48.6	-45.3	-44.6
2	1	1X	-31.2	-32.6	-30.9	-18.6	-39.1	-39.5	-42.4	-31.9
4	1	2X	-19.8	-25.5	-35.0	-36.0	-42.0	-48.5		
4	1	24	-25.8	-27.7	-33.3	-30.1	-33.4	-43.9	-42.1	-39.7
4	1	25	-19.7	-22.0	-25.2	-27.8	-36.8	-43.6	-42.5	
4	1	26	-25.6	-31.9	-33.5	-41.8	-45.4	-54.2	-53.9	-50.1
4	1	27	-18.7	-24.4	-30.6	-32.7	-39.8	-49.2	-48.8	-45.7
1	2	2	-24.1	-28.1	-32.2	-33.4	-38.9	-47.3	-48.1	-45.7
1	2	4	-24.7	-29.2	-34.2	-38.0	-44.3	-49.0	-49.0	-46.1
1	2	6	-23.7	-27.0	-33.6	-36.0	-39.9	-47.8	-47.2	-47.8
1	2	7	-27.5	-28.7	-34.7	-36.7	-40.8	-48.3	-51.2	-48.8
1	2	8	-28.5	-31.2	-34.1	-33.3	-33.5	-35.8	-36.0	-34.1
1	2	1A	-26.7	-31.8	-33.7	-34.2	-37.1	-39.4	-39.1	-38.8
1	2	2X	-30.7	-32.3	-34.9	-37.5	-40.4	-46.6	-47.3	-44.5
1	2	1X	-29.4	-33.2	-34.1	-21.8	-35.8	-37.5	-40.4	-37.7
3	2	1X	-30.5	-32.7	-34.0	-30.4	-33.6	-35.3	-35.0	-35.9
3	2	19	-32.3	-34.1	-35.0	-24.4	-37.2	-43.6	-42.7	-35.2
3	2	20	-22.2	-24.6	-28.1	-32.6	-34.3	-38.6	-38.4	-34.9
3	2	21	-28.9	-31.7	-36.7	-39.7	-42.5	-49.1	-47.8	-48.6
3	2	22	-18.4	-28.0	-34.3	-34.2	-40.7	-48.0	-46.3	-47.3
2	2	10	-24.6	-23.6	-29.0	-33.0	-37.0	-47.2	-45.0	-46.3
2	2	13	-22.7	-23.0	-28.2	-29.3	-32.3	-42.6	-44.0	-44.0
2	2	14	-25.7	-23.9	-30.7	-34.6	-38.9	-46.8	-46.5	-45.8
2	2	15	-25.7	-27.4	-30.9	-33.1	-36.9	-43.8	-44.9	-42.5
2	2	17	-26.5	-27.4	-34.1	-33.4	-39.3	-51.2	-49.8	-48.5
2	2	2A	-26.3	-31.9	-35.1	-36.3	-38.8	-40.8	-39.0	-37.0
2	2	2X	-28.5	-31.8	-35.0	-35.5	-40.4	-47.3		
2	2	1X	-29.3	-33.5	-34.4	-21.4	-37.3	-41.1	-37.6	-34.4
4	2	2X	-25.9	-27.5	-36.2	-37.6	-42.3	-46.5		
4	2	24	-27.5	-31.4	-33.4	-24.3	-38.0	-43.6	-42.3	-34.3
4	2	25	-23.0	-26.9	-29.6	-33.8	-38.0	-43.1	-40.3	-37.0
4	2	26	-28.6	-31.7	-38.7	-39.9	-43.2	-51.6	-50.2	-46.6
4	2	27	-12.3	-23.6	-26.7	-32.1	-39.1	-43.1	-43.2	-42.9

\*\*\*MISSING DATA DELETED DUE TO EXCESSIVE ROLL AND DRIFT

0.4 GHZ SCATTEROMETER RETURN - HV POLARIZATION  
AUGUST 8, 1978

LOCATION			LOOK ANGLE (IN DEGREES)							
LINE	RUN	FLD	5	10	15	20	25	35	40	45
1	1	2	-24.4	-28.3	-33.7	-37.5	-42.7	-49.8	-48.5	-49.0
1	1	4	-24.2	-28.4	-35.4	-41.8	-48.0	-50.4	-51.3	-49.7
1	1	6	-21.7	-28.9	-35.2	-41.4	-47.6	-51.3	-49.9	-50.6
1	1	7	-23.5	-28.2	-36.2	-40.3	-46.5	-54.1	-51.5	-51.4
1	1	8	-27.3	-30.6	-32.5	-33.9	-36.0	-39.3	-38.2	-36.8
1	1	1A	-26.9	-30.6	-34.5	-35.7	-38.5	-42.1	-41.4	-39.9
1	1	2X	-27.1	-29.2	-34.9	-39.6	-45.6	-50.8	-46.9	-42.1
1	1	1X	-23.1	-24.9	-29.1	-25.9	-33.3	-36.9	-36.5	-34.4
3	1	1X	-28.3	-30.6	-30.7	-31.1	-33.5	-36.0	-35.4	-37.2
3	1	19	-29.1	-30.7	-33.4	-25.9	-36.6	-43.7	-43.4	-39.0
3	1	20	-23.3	-25.0	-28.6	-33.3	-38.2	-39.1	-39.0	-38.2
3	1	21	-24.4	-29.2	-36.7	-40.5	-46.7	-53.5	-50.6	-50.6
3	1	22	-18.3	-24.1	-32.3	-35.2	-38.8	-45.5	-44.9	-46.5
2	1	10	-21.5	-25.1	-32.2	-37.6	-44.6	-52.3	-50.0	-48.8
2	1	13	-21.2	-25.5	-28.5	-34.0	-36.1	-43.5	-45.9	-41.0
2	1	14	-24.8	-28.7	-35.0	-41.0	-47.1	-51.9	-50.5	-49.9
2	1	15	-23.9	-27.3	-31.8	-37.6	-41.8	-44.7	-46.9	-47.1
2	1	17	***							
2	1	2A	-24.4	-29.5	-32.7	-35.7	-37.8	-39.6	-38.2	-36.2
2	1	2X	-24.2	-30.6	-38.4	-43.1	-48.9	-50.0	-47.6	-49.6
2	1	1X								
4	1	2X	-26.1	-30.4	-35.9	-40.4	-47.4	-55.6	-50.8	-51.4
4	1	24	-26.0	-29.3	-32.8	-23.2	-37.5	-44.1	-43.2	-39.0
4	1	25	-24.4	-26.7	-30.5	-34.8	-37.3	-42.9	-41.8	-39.3
4	1	26								
4	1	27	-17.4	-26.9	-33.6	-37.9	-43.0	-49.8	-50.8	-49.3
1	2	2								
1	2	4	-23.9	-27.7	-34.5	-39.5	-44.7	-48.5	-49.7	-47.4
1	2	6								
1	2	7								
1	2	8	-28.8	-30.7	-32.9	-34.3	-37.2	-38.0	-38.3	-36.9
1	2	1A	-25.5	-32.3	-35.2	-37.0	-39.5	-41.7	-40.0	-39.1
1	2	2X	-26.8	-30.9	-35.5	-40.4	-45.0	-50.2	-46.4	-45.6
1	2	1X	-21.6	-26.5	-30.9	-26.2	-34.6	-38.4	-37.0	-35.4
3	2	1X	-28.5	-29.7	-30.5	-32.7	-35.2	-38.8	-37.0	-37.0
3	2	19	-25.4	-28.6	-32.1	-23.2	-37.5	-45.3	-42.4	-37.6
3	2	20	-22.2	-25.2	-26.7	-33.0	-35.9	-40.1	-38.6	-36.6
3	2	21	-25.9	-29.6	-35.0	-39.8	-45.9	-53.2	-50.0	-51.5
3	2	22	-13.4	-22.2	-30.3	-34.5	-42.9	-43.3	-45.4	-40.5
2	2	10	-22.1	-25.5	-33.7	-37.3	-45.1	-49.9	-50.3	-49.6
2	2	13	-21.5	-24.6	-27.8	-32.8	-37.0	-41.6	-41.1	-42.9
2	2	14	-24.0	-27.8	-32.3	-39.6	-43.6	-50.5	-52.1	-47.0
2	2	15	-24.1	-27.2	-32.6	-37.9	-43.6	-44.0	-44.6	-45.1
2	2	17	-26.7	-26.6	-37.0	-40.4	-46.0	-55.3	-52.4	-49.8
2	2	2A								
2	2	2X	-24.9	-28.6	-34.9	-37.1	-45.1	-51.5	-48.3	-49.2
2	2	1X	-25.1	-29.4	-31.3	-29.6	-38.5	-41.0	-41.6	-33.0
4	2	2X	-27.5	-32.0	-37.2	-42.6	-48.1	-54.7	-51.8	-50.5
4	2	24	-27.6	-29.1	-32.9	-21.1	-36.8	-44.0	-42.7	-34.5
4	2	25	-25.8	-27.1	-31.7	-34.3	-36.6	-42.9	-40.9	-36.2
4	2	26	-25.1	-29.7	-33.7	-41.5	-47.9	-52.5	-51.8	-49.5
4	2	27	-16.3	-23.3	-34.9	-38.9	-45.9	-49.8	-49.4	-46.4

\*\*\* MISSING DATA DELETED DUE TO EXCESSIVE ROLL AND DRIFT

0.4 GHZ SCATTEROMETER RETURN - HV POLARIZATION  
AUGUST 11, 1978

LOCATION			LOOK ANGLE (IN DEGREES)							
LINE	RUN	FLD	5	10	15	20	25	35	40	45
1	1	2	-23.0	-27.0	-32.1	-34.9	-38.9	-47.6	-46.7	-46.0
1	1	4	-26.3	-29.1	-34.2	-36.7	-42.5	-46.4	-45.6	-46.8
1	1	6	***							
1	1	7	-22.6	-30.1	-33.5	-35.3	-39.3	-44.0	-44.2	-44.0
1	1	8								
1	1	1A	-28.0	-30.6	-32.6	-32.3	-34.6	-38.1	-36.0	-36.2
1	1	2X								
1	1	1X	-27.1	-27.5	-27.8	-19.0	-31.4	-33.5	-31.5	-28.6
3	1	1X								
3	1	19								
3	1	20	-17.3	-21.8	-19.6	-27.4	-30.8	-35.8	-34.4	-32.6
3	1	21	-24.2	-27.7	-32.8	-35.3	-39.0	-46.0	-44.6	-45.0
3	1	22								
2	1	10	-22.8	-24.9	-30.1	-32.8	-38.4	-46.6	-44.3	-47.1
2	1	13	-21.0	-26.2	-29.8	-32.7	-30.3	-42.8	-38.9	-38.9
2	1	14	-24.5	-28.7	-32.9	-35.2	-39.4	-46.4	-48.6	-47.4
2	1	15	-24.0	-25.6	-30.6	-31.9	-35.2	-39.1	-38.7	-41.3
2	1	17	-26.6	-27.6	-31.2	-34.4	-40.8	-48.9	-49.2	-48.1
2	1	2A	-24.9	-30.3	-33.5	-32.6	-35.0	-36.5	-35.0	-34.6
2	1	2X								
2	1	1X	-30.5	-34.9	-34.1	-21.6	-31.5	-40.1	-36.8	-30.2
4	1	2X	-24.4	-28.1	-33.9	-37.0	-40.4	-48.6	-46.2	-46.5
4	1	24								
4	1	25								
4	1	26	-23.5	-28.3	-34.2	-35.4	-38.6	-46.6	-48.5	-47.4
4	1	27								
1	2	2	-20.3	-24.8	-29.7	-32.0	-37.2	-45.0	-45.6	-43.6
1	2	4								
1	2	6								
1	2	7								
1	2	8	-27.9	-29.1	-30.5	-28.9	-31.0	-33.6	-33.3	-33.8
1	2	1A								
1	2	2X	-26.9	-28.5	-33.4	-35.3	-36.8	-42.8	-41.7	-41.5
1	2	1X	-23.8	-28.0	-27.3	-18.2	-29.8	-35.5	-34.5	-33.1
3	2	1X	-27.3	-28.5	-30.9	-28.2	-29.1	-33.1	-31.5	-32.4
3	2	19	-23.9	-26.8	-28.2	-15.9	-30.4	-37.8	-36.7	-29.1
3	2	20	-21.5	-21.9	-18.3	-27.8	-29.6	-34.1	-33.4	-30.7
3	2	21	-22.9	-25.8	-31.4	-34.7	-38.2	-46.3	-44.0	-43.3
3	2	22								
2	2	10	-20.4	-23.9	-30.3	-33.6	-38.7	-46.6	-45.5	
2	2	13	-22.4	-24.8	-27.8	-28.2	-31.5	-39.7	-38.8	-35.7
2	2	14	-23.8	-27.4	-31.8	-34.1	-37.4	-44.7	-44.2	-43.5
2	2	15	-22.0	-24.1	-29.0	-29.7	-32.7	-39.9	-40.1	-41.7
2	2	17	-25.5	-25.5	-30.0	-33.3	-37.0	-48.6	-48.5	-46.8
2	2	2A								
2	2	2X								
2	2	1X	-29.2	-31.0	-30.1	-14.0	-30.1	-42.6	-37.0	-27.7
4	2	2X	-24.8	-29.5	-33.0	-35.2	-39.8	-46.1	-45.3	-44.8
4	2	24								
4	2	25	-24.3	-25.6	-27.4	-30.7	-33.2	-37.9	-37.3	-34.2
4	2	26								
4	2	27								

\*\*\* MISSING DATA DELETED DUE TO EXCESSIVE ROLL AND DRIFT

0.4 GHZ SCATTEROMETER RETURN - HV POLARIZATION  
AUGUST 14, 1978

LOCATION			LOOK ANGLE (IN DEGREES)							
LINE	RUN	FLD	5	10	15	20	25	35	40	45
1	2	2	-24.1	-28.4	-33.7	-34.9	-38.9	-46.0	-46.3	-48.0
1	2	4	***							
1	2	6	-23.5	-27.3	-32.1	-35.0	-38.5	-44.1	-42.7	-44.7
1	2	7	-25.8	-28.4	-31.8	-34.2	-37.3	-43.5	-42.0	-44.1
1	2	8	-26.5	-31.1	-31.4	-31.2	-31.8	-34.7	-35.2	-33.1
1	2	1A	-26.0	-31.9	-33.2	-34.3	-35.0	-36.9	-37.9	-35.4
1	2	2X	-27.1	-29.6	-34.8	-37.3	-39.1	-43.0	-42.6	-39.9
1	2	1X	-26.4	-28.8	-32.7	-19.0	-32.6	-38.7	-37.9	-32.3
3	2	1X	-27.9	-29.8	-29.8	-29.3	-30.6	-33.1	-33.0	-31.5
3	2	19	-22.7	-25.5	-28.2	-18.0	-30.3	-39.7		
3	2	20	-24.3	-25.6	-22.9	-30.9	-31.6	-37.7	-37.2	-32.3
3	2	21	-24.7	-25.8	-31.7	-36.7	-37.9	-46.2	-45.0	-44.6
3	2	22	-21.3	-23.6	-23.7	-28.4	-34.4	-40.7	-39.7	-40.8
2	2	10	-21.3	-22.6	-28.5	-32.4	-36.6	-44.6		
2	2	13	-19.8	-26.9	-32.1	-37.1	-41.8	-45.6	-46.5	
2	2	14	-24.3	-28.0	-32.2	-35.1	-39.1	-45.8	-45.4	-46.2
2	2	15	-23.7	-26.2	-28.6	-31.4	-36.7	-37.7	-38.4	-38.9
2	2	17	-26.2	-27.4	-33.3	-33.0	-39.1	-48.5	-47.8	-43.4
2	2	2A	-26.0	-31.3	-32.6	-33.2	-32.9	-34.5	-35.7	-33.4
2	2	2X	-23.6	-26.3	-34.6	-35.5	-39.5	-43.7	-41.8	-41.1
2	2	1X	-31.2	-32.2	-27.4	-18.7	-33.9	-40.0	-38.9	-31.4
4	2	2X	-24.4	-29.6	-33.1	-37.2	-41.2	-49.7	-46.1	-46.7
4	2	24	-26.7	-27.3	-28.7	-15.6	-30.6	-39.7	-38.0	-30.5
4	2	25	-20.0	-23.0	-23.6	-28.2	-30.8	-35.8	-35.3	-28.7
4	2	26	-23.0	-27.2	-33.6	-36.1	-35.9	-44.6	-46.5	-44.3
4	2	27	-19.9	-24.9	-34.5	-36.5	-40.7	-45.9	-46.3	-44.0
1	3	2	-23.8	-27.4	-32.8	-36.7	-39.7	-46.3		
1	3	4	-20.7	-25.3	-29.8	-32.8	-38.1	-43.0		
1	3	6	-23.7	-26.4	-29.9	-34.3	-37.5	-42.9		
1	3	7	-24.3	-28.9	-32.0	-33.0	-37.9	-42.8		
1	3	8	-26.8	-30.1	-29.6	-29.7	-30.4	-32.7		
1	3	1A	-26.6	-30.9	-30.8	-33.3	-33.6	-35.8		
1	3	2X	-27.1	-30.7	-34.4	-36.9	-38.0	-47.0		
1	3	1X	-27.2	-28.8	-27.3	-19.0	-31.2	-34.7		
3	3	1X								
3	3	19	-22.3	-27.5	-30.4	-17.4	-30.7	-39.8	-37.0	-24.8
3	3	20	-21.8	-25.3	-25.1	-31.8	-32.7	-38.2	-34.8	-32.5
3	3	21	-24.1	-26.3	-32.6	-36.1	-37.5	-43.8	-45.7	-45.9
3	3	22	-19.4	-24.5	-28.2	-30.1	-35.7	-44.0	-43.9	-41.6
2	3	10	-20.7	-23.2	-30.3	-33.0	-38.3	-46.6	-46.3	-44.5
2	3	13								
2	3	14								
2	3	15	-23.0	-25.3	-28.9	-30.0	-34.6	-37.8	-38.7	
2	3	17	-25.9	-25.3	-31.4	-27.5	-38.0	-44.9	-43.0	-39.6
2	3	2A	-24.7	-28.3	-31.0	-32.9	-33.9	-37.0	-35.3	-35.6
2	3	2X	-27.4	-30.1	-32.5	-20.5	-35.4	-38.2	-38.1	-32.9
2	3	1X	-26.7	-29.4	-33.0	-22.9	-34.1	-42.6	-38.8	-33.7
4	3	2X	-24.6	-27.8	-32.7	-36.4	-39.6	-46.4	-45.5	-44.4
4	3	24	-22.1	-25.0	-28.0	-17.6	-32.0	-40.9	-37.2	-28.0
4	3	25	-20.1	-22.2	-20.7	-28.1	-30.8	-34.8	-33.5	-28.0
4	3	26	-23.9	-25.7	-32.3	-36.2	-38.9	-45.4	-46.3	-41.7
4	3	27	-15.4	-21.9	-28.2	-32.1	-37.0	-44.7	-46.1	-44.4

\*\*\* MISSING DATA DELETED DUE TO EXCESSIVE ROLL AND DRIFT



0.4 GHZ SCATTEROMETER RETURN - HV POLARIZATION  
AUGUST 17, 1978

LOCATION			LOOK ANGLE (IN DEGREES)							
LINE	RUN	FLD	5	10	15	20	25	35	40	45
1	1	2	-23.4	-26.9	-33.9	-35.7	-37.8	-48.9	-47.3	-49.7
1	1	4	-24.4	-25.3	-28.5	-32.3	-39.6	-48.0	-46.4	-47.5
1	1	6	-23.7	-23.4	-32.2	-34.0	-38.8	-47.6	-46.6	-47.0
1	1	7	-25.0	-26.9	-31.7	-31.2	-36.8	-41.9	-39.9	-41.0
1	1	8	-26.0	-29.0	-30.5	-29.8	-31.5	-33.2	-34.1	-34.0
1	1	1A	-26.0	-30.3	-33.0	-31.9	-35.1	-38.6	-37.5	-36.8
1	1	2X	-29.6	-34.6	-34.8	-24.6	-38.0	-41.6	-40.7	-37.7
1	1	1X	-28.9	-30.7	-31.3	-21.0	-31.8	-37.6	-34.0	-34.5
3	1	1X	-21.9	-26.4	-28.9	-29.0	-31.6	-35.9	-35.7	-36.7
3	1	19	-21.4	-25.7	-26.9	-14.8	-28.3	-38.1	-37.9	-30.3
3	1	20	-23.3	-24.0	-20.9	-27.8	-28.3	-32.3	-33.6	-29.5
3	1	21	-23.0	-27.7	-32.7	-35.0	-39.3	***		
3	1	22	-16.9	-23.6	-27.1	-30.8	-33.2			
2	1	10	-22.9	-24.7	-32.0	-33.4	-39.3	-50.4	-46.0	-46.3
2	1	13	-22.3	-24.0	-29.6	-30.2	-35.7	-45.3	-43.2	-44.6
2	1	14	-26.1	-28.3	-35.0	-34.9	-38.5	-49.4	-48.5	-48.4
2	1	15	-25.3	-24.8	-30.1	-32.3	-36.1	-42.7	-42.6	-41.7
2	1	17	-26.4	-25.7	-29.9	-34.8	-38.9	-48.1	-50.5	-50.5
2	1	2A	-25.5	-19.2	-30.9	-30.9	-35.0	-36.7	-35.3	-35.3
2	1	2X	-26.8	-29.7	-33.3	-24.1	-27.6	-42.4	-46.6	-36.5
2	1	1X	-30.2	-30.5	-33.2	-16.2	-33.4	-40.4	-37.2	-34.2
4	1	2X	-25.0	-29.4	-31.9	-35.7	-37.2			
4	1	24	-21.2	-23.9	-27.2	-14.5	-27.3			
4	1	25	-25.2	-24.1	-19.1	-29.1	-28.5			
4	1	26	-24.7	-28.9	-33.9	-36.7	-38.9			
4	1	27	-16.2	-23.4	-31.2	-35.2	-37.2			
1	2	2	-22.4	-26.5	-32.8	-34.8	-37.8	-47.8	-46.3	-47.7
1	2	4	-24.6	-26.2	-30.2	-33.8	-37.3	-48.2	-47.4	-48.3
1	2	6	-22.7	-26.8	-32.1	-33.1	-37.6	-46.9	-47.1	-47.4
1	2	7	-24.8	-26.8	-30.4	-31.8	-36.1	-40.8	-39.6	-38.4
1	2	8	-25.5	-29.4	-31.0	-28.4	-31.6	-33.5	-32.4	-33.0
1	2	1A	-25.0	-28.9	-31.7	-31.6	-33.4	-38.0	-36.4	-35.7
1	2	2X	-28.7	-31.5	-34.4	-24.4	-37.2	-49.1	-42.0	-34.1
1	2	1X	-28.6	-30.0	-31.6	-19.6	-33.5	-36.6	-34.7	-33.5
3	2	1X	-26.7	-29.7	-28.9	-26.0	-31.6	-33.3		
3	2	19	-27.7	-27.1	-30.0	-15.8	-29.9	-41.6		
3	2	20	-22.3	-23.4	-21.7	-28.8	-30.4	-35.1		
3	2	21								
3	2	22								
2	2	10	-23.8	-25.2	-32.8	-34.2	-39.4	-48.5	-47.8	-49.1
2	2	13	-22.3	-24.8	-29.3	-30.7	-35.0	-44.3	-44.3	-47.1
2	2	14	-27.1	-28.4	-35.0	-37.4	-41.3	-50.7	-50.1	-49.5
2	2	15	-24.6	-26.2	-30.0	-29.9	-35.6	-40.9	-40.8	-42.9
2	2	17	-25.4	-25.5	-32.5	-33.4	-41.1	-52.4	-50.4	-49.9
2	2	2A	-24.8	-27.8	-31.5	-30.2	-33.2	-36.8	-35.9	-36.1
2	2	2X	-30.5	-28.2	-31.8	-20.4	-35.7	-46.0	-43.6	-39.7
2	2	1X	-30.3	-32.8	-34.2	-19.9	-30.2	-41.3	-40.5	-34.0
4	2	2X	-25.1	-31.6	-33.9	-36.9	-38.8	-42.7	-41.5	
4	2	24	-26.3	-28.2	-29.5	-18.5	-32.7	-38.6	-38.6	
4	2	25	-24.9	-26.5	-24.2	-31.4	-33.2	-37.7	-36.3	
4	2	26	-25.2	-30.2	-34.9	-37.5	-39.3	-47.6	-46.8	-46.9
4	2	27	-15.4	-24.8	-31.9	-35.2	-40.8	-47.7	-47.3	-45.4

\*\*\* MISSING DATA DELETED DUE TO EXCESSIVE ROLL AND DRIFT

VOLUMETRIC SOIL MOISTURE FOR THE LINE SENSORS  
AUGUST 2, 1978

LOCATION			DEPTH INCREMENT (CM)						
LINE	RUN	FLD	(0-2)	(2-5)	(5-9)	(9-15)	(0-15)	(15-30)	(30-45)
1	1	2	2.5	3.0	5.7	15.5	9.8	25.6	26.4
1	1	4	22.0	23.2	24.1	22.9	22.6	20.9	20.9
1	1	6	3.0	4.0	7.3	16.2	11.1	17.5	18.3
1	1	7	5.2	9.9	13.6	16.1	13.9	19.2	21.2
1	1	8	2.3	3.9	6.3	10.6	9.0	16.3	17.7
1	1	1A	6.1	9.6	13.1	19.4	15.6	23.1	23.7
1	1	2X	4.9	5.1	6.9	15.8	13.5	25.9	28.5
1	1	1X	25.0	23.7	28.4	32.3	30.0	32.1	32.1
3	1	1X	24.9	24.9	29.4	32.8	31.3	33.0	32.2
3	1	19	11.1	15.8	20.0	22.0	17.9	27.0	28.0
3	1	20	28.2	26.5	30.5	36.6	26.9	34.0	35.2
3	1	21	15.5	8.6	7.7	12.5	13.4	24.0	24.5
3	1	22	21.5	24.0	24.9	22.7	23.1	22.9	20.1
2	1	10	2.2	2.7	6.8	14.4	9.6	21.3	19.3
2	1	13	14.2	16.6	18.3	18.3	17.8	19.3	16.1
2	1	14	22.3	23.0	25.3	25.8	26.2	26.4	24.2
2	1	15	7.1	12.7	16.2	18.1	15.5	21.6	23.2
2	1	17	3.7	4.6	6.5	11.7	10.8	22.2	23.5
2	1	2A	4.6	6.4	13.4	25.8	14.9	29.0	28.4
2	1	2X	5.5	4.8	7.8	23.1	13.6	32.9	34.1
2	1	1X	24.7	26.2	30.4	33.3	32.6	33.9	32.3
4	1	2X	5.2	5.0	7.3	19.5	13.6	29.4	31.3
4	1	24	12.4	14.6	18.1	25.3	21.9	26.1	28.1
4	1	25	16.8	18.5	22.7	26.3	21.7	27.4	25.6
4	1	26	4.4	5.8	7.3	10.0	9.2	21.1	22.4
4	1	27	12.1	20.8	22.2	21.6	20.6	23.2	20.0
1	2	2	2.7	3.2	6.0	14.8	9.3	23.9	25.4
1	2	4	17.9	20.6	21.9	21.5	21.0	21.9	19.4
1	2	6	3.0	4.0	7.3	16.2	11.1	17.5	18.3
1	2	7	5.2	9.9	13.6	16.1	13.9	19.2	21.2
1	2	8	2.3	3.9	6.3	10.6	9.0	16.3	17.7
1	2	1A	6.1	9.6	13.1	19.4	15.6	23.1	23.7
1	2	2X	4.9	5.1	6.9	15.8	13.5	25.9	28.5
1	2	1X	25.0	23.7	28.4	32.3	30.0	32.1	32.1
3	2	1X	24.9	24.9	29.4	32.8	31.3	33.0	32.2
3	2	19	11.1	15.8	20.0	22.0	17.9	27.0	28.0
3	2	20	27.6	24.6	28.0	33.8	25.6	30.5	31.1
3	2	21	16.9	8.7	7.4	12.5		17.9	21.7
3	2	22	22.4	25.1	26.1	23.2	23.2	24.1	20.2
2	2	10	2.2	2.7	6.8	14.4	9.6	21.3	19.3
2	2	13	15.9	18.9	20.9	20.1	19.6	20.8	17.9
2	2	14	21.1	22.1	24.2	24.6	23.4	25.9	22.9
2	2	15	7.1	12.7	16.2	18.1	15.5	21.6	23.2
2	2	17	4.2	4.8	8.0	13.0	11.0	21.5	22.5
2	2	2A	4.6	6.4	13.4	25.8	14.9	29.0	28.4
2	2	2X	5.5	4.8	7.8	23.1	13.6	32.9	34.1
2	2	1X	24.7	26.2	30.4	33.3	32.6	33.9	32.3
4	2	2X	5.2	5.0	7.3	19.5	13.6	29.4	31.3
4	2	24	10.7	14.6	21.1	27.4	21.6	28.5	29.6
4	2	25	17.5	19.5	23.8	27.9	22.7	28.3	26.6
4	2	26	4.4	5.8	7.3	10.0	9.2	21.1	22.4
4	2	27	12.1	20.8	22.2	21.6	20.6	23.2	20.0

VOLUMETRIC SOIL MOISTURE FOR THE LINE SENSORS  
AUGUST 5, 1978

LOCATION			DEPTH INCREMENT (CM)						
LINE	RUN	FLD	(0-2)	(2-5)	(5-9)	(9-15)	(0-15)	(15-30)	(30-45)
1	1	2	10.5	12.3	8.8	13.6	13.7	22.0	24.1
1	1	4	16.7	18.0	20.6	20.9	20.9	21.2	17.8
1	1	6	13.0	14.6	12.4	15.7	14.1	18.8	18.8
1	1	7	10.4	15.7	19.8	20.7	18.7	21.4	23.3
1	1	8	7.2	8.7	8.1	11.1	10.1	18.6	19.5
1	1	1A	5.8	7.2	10.8	21.3	12.6	22.9	21.1
1	1	2X	4.9	5.1	7.1	15.8	13.3	26.0	28.4
1	1	1X	26.9	25.6	30.3	36.0	31.7	34.1	33.0
3	1	1X	24.0	24.5	28.9	34.7	29.9	33.4	31.8
3	1	19	16.3	21.8	24.8	27.9	23.8	29.8	30.2
3	1	20	29.1	30.7	31.3	38.9	33.7	35.5	34.4
3	1	21	5.9	6.7	7.5	11.9	7.9	21.7	24.2
3	1	22	21.1	23.9	23.8	22.8	21.7	23.1	21.2
2	1	10	10.2	11.4	10.6	15.6	13.2	20.5	19.0
2	1	13	32.2	31.6	31.6	29.2	30.2	24.2	19.1
2	1	14	20.0	20.4	22.2	24.2	22.4	27.0	23.4
2	1	15	11.4	15.3	17.4	18.7	17.7	19.9	22.9
2	1	17	5.8	5.8	8.0	13.5	10.5	22.5	23.9
2	1	2A	26.1	24.5	25.3	29.8	28.4	30.9	30.2
2	1	2X	15.1	14.1	16.3	27.3	19.8	33.5	34.7
2	1	1X	21.1	23.3	27.5	33.3	28.1	32.6	30.6
4	1	2X	5.3	5.1	7.9	18.7	13.6	30.0	32.6
4	1	24	20.7	25.8	28.4	31.7	28.4	30.9	31.6
4	1	25	32.2	26.8	30.1	35.6	30.8	32.2	30.5
4	1	26	7.2	7.7	8.4	13.3	11.2	24.0	24.7
4	1	27	11.2	18.6	19.8	19.2	18.2	19.4	18.3
1	2	2	11.6	12.7	10.1	14.3	14.6	23.3	24.4
1	2	4	16.7	18.0	20.6	20.9	20.9	21.2	17.8
1	2	6	13.0	14.6	12.4	15.7	14.1	18.8	18.8
1	2	7	10.0	15.2	18.7	19.4	17.8	19.9	21.6
1	2	8	8.1	8.6	8.6	12.5	10.2	17.5	18.8
1	2	1A	5.8	7.2	10.8	21.3	12.6	22.9	21.1
1	2	2X	4.9	5.1	7.1	15.8	13.3	26.0	28.4
1	2	1X	26.9	25.6	30.3	36.0	31.7	34.1	33.0
3	2	1X	24.0	24.5	28.9	34.7	29.9	33.4	31.8
3	2	19	14.8	20.4	21.8	23.1	21.9	26.9	28.6
3	2	20	29.1	30.7	31.3	38.9	33.7	35.5	34.4
3	2	21	5.9	6.7	7.5	11.9	7.9	21.7	24.2
3	2	22	21.7	24.9	25.0	23.5	22.9	23.9	22.2
2	2	10	10.2	11.4	10.6	15.6	13.2	20.5	19.0
2	2	13	32.7	32.5	32.5	29.9	30.7	24.2	19.7
2	2	14	20.4	20.4	22.3	23.7	22.3	26.0	24.0
2	2	15	11.4	15.3	17.4	18.7	17.7	19.9	22.9
2	2	17	5.5	5.4	7.4	12.8	9.3	22.7	22.7
2	2	2A	26.1	24.5	25.3	29.8	28.4	30.9	30.2
2	2	2X	15.1	14.1	16.3	27.3	19.8	33.5	34.7
2	2	1X	21.1	23.3	27.5	33.3	28.1	32.6	30.6
4	2	2X	10.0	9.6	11.7	21.5	16.5	29.8	31.6
4	2	24	20.7	25.8	28.4	31.7	28.4	30.9	31.6
4	2	25	33.5	28.5	30.3	36.4	31.2	32.7	32.2
4	2	26	6.7	7.4	8.3	12.6	10.3	22.6	23.1
4	2	27	15.4	21.4	22.8	21.9	21.2	23.8	21.2

VOLUMETRIC SOIL MOISTURE FOR THE LINE SENSORS  
AUGUST 8, 1978

LOCATION			DEPTH INCREMENT (CM)						
LINE	RUN	FLD	(0-2)	(2-5)	(5-9)	(9-15)	(0-15)	(15-30)	(30-45)
1	1	2	3.8	8.3	8.6	14.5	13.4	22.2	24.6
1	1	4	21.3	22.4	23.2	22.6	22.5	21.9	19.2
1	1	6	6.2	10.1	11.4	13.7	13.2	17.9	19.6
1	1	7	6.0	12.8	17.3	20.6	16.8	21.7	24.1
1	1	8	4.8	6.8	8.9	12.3	10.9	17.3	18.2
1	1	1A	5.8	7.4	11.2	20.3	12.4	22.8	22.0
1	1	2X	4.9	5.1	7.2	15.0	13.5	26.2	28.3
1	1	1X	17.8	19.5	24.7	31.4	27.8	31.9	31.9
3	1	1X	15.9	18.0	23.4	30.9	25.5	30.8	30.4
3	1	19	16.3	22.4	23.4	25.1	23.0	26.3	28.7
3	1	20	33.0	28.6	29.5	32.4	30.8	30.6	29.4
3	1	21	5.3	5.6	6.4	9.5	7.9	20.9	27.5
3	1	22	21.6	24.0	24.4	23.4	24.3	24.9	23.3
2	1	10	4.7	8.4	10.2	16.0	12.6	20.5	19.2
2	1	13	23.5	26.7	27.4	26.5	26.5	24.2	19.3
2	1	14	10.8	16.1	18.1	21.5	18.1	24.6	22.8
2	1	15	21.1	22.8	24.1	23.7	23.1	21.9	23.1
2	1	17	4.1	4.9	7.4	13.0	9.8	23.1	23.1
2	1	2A	15.8	18.8	21.7	27.6	24.0	29.7	29.2
2	1	2X	11.4	12.6	15.0	26.4	18.5	32.7	34.8
2	1	1X	14.0	16.5	22.0	30.4	23.1	29.7	28.9
4	1	2X	8.2	8.8	11.1	20.7	16.0	29.5	31.5
4	1	24	20.5	27.0	28.3	30.1	28.6	31.2	31.4
4	1	25	14.1	15.1	19.8	26.2	21.4	25.9	27.8
4	1	26	6.7	7.1	9.2	14.2	11.7	24.5	25.0
4	1	27	15.6	20.5	22.5	21.5	20.0	22.5	21.5
1	2	2	3.8	8.3	8.6	14.5	13.4	22.2	24.6
1	2	4	20.5	21.8	22.6	22.1	21.7	22.2	18.6
1	2	6	6.0	9.5	10.9	13.5	15.6	20.1	19.4
1	2	7	6.0	12.8	17.3	20.6	16.8	21.7	24.1
1	2	8	5.0	6.4	8.9	12.7	10.1	17.5	18.3
1	2	1A	5.5	7.8	13.0	20.7	14.7	23.3	24.6
1	2	2X	4.9	5.1	7.2	15.0	13.5	26.2	28.3
1	2	1X	17.8	19.5	24.7	31.4	27.8	31.9	31.9
3	2	1X	12.5	14.6	19.5	26.8	20.7	27.4	28.1
3	2	19	17.9	23.8	25.3	26.8	24.3	28.7	29.3
3	2	20	37.1	32.2	32.7	35.1	33.8	33.7	32.9
3	2	21	6.0	6.3	7.2	10.9	8.6	21.8	28.4
3	2	22	22.5	24.0	24.2	23.4	23.8	24.2	23.8
2	2	10	4.7	8.4	10.2	16.0	12.6	20.5	19.2
2	2	13	23.5	26.7	27.4	26.5	26.5	24.2	19.3
2	2	14	10.8	16.1	18.1	21.5	18.1	24.6	22.8
2	2	15	21.8	23.4	24.5	24.7	23.6	23.0	24.3
2	2	17	4.3	5.4	7.7	13.7	10.7	23.3	23.8
2	2	2A	25.8	30.2	31.9	33.1	29.6	32.4	32.2
2	2	2X	11.4	12.6	15.0	26.4	18.5	32.7	34.8
2	2	1X	14.0	16.5	22.0	30.4	23.1	29.7	28.9
4	2	2X	5.2	5.1	8.0	17.6	13.8	29.4	32.5
4	2	24	22.0	28.4	27.5	30.8	29.1	31.7	31.5
4	2	25	14.1	15.1	19.8	26.2	21.4	25.9	27.8
4	2	26	6.7	7.1	9.2	14.2	11.7	24.5	25.0
4	2	27	15.6	20.5	22.5	21.5	20.0	22.5	21.5

VOLUMETRIC SOIL MOISTURE FOR THE LINE SENSORS  
AUGUST 11, 1978

LOCATION			DEPTH INCREMENT (CM)						
LINE	RUN	FLD	(0-2)	(2-5)	(5-9)	(9-15)	(0-15)	(15-30)	(30-45)
1	1	2	5.2	7.1	10.0	14.7	10.9	21.2	24.3
1	1	4	9.9	13.3	14.8	14.5	14.0	18.3	17.8
1	1	6	3.9	6.9	11.0	16.6	13.4	20.0	20.8
1	1	7	18.8	22.3	23.2	23.9	22.5	21.1	22.2
1	1	8	8.5	9.5	11.0	14.2	14.1	19.6	20.3
1	1	1A	4.9	7.1	11.7	18.5	14.8	22.1	22.2
1	1	2X	4.9	5.1	7.3	16.3	13.7	26.3	28.2
1	1	1X	11.9	14.5	21.1	27.0	22.2	28.5	29.5
3	1	1X	9.7	11.8	16.9	24.0	16.9	24.9	25.5
3	1	19	11.2	16.9	21.7	24.6	21.6	27.0	27.4
3	1	20	25.1	25.7	30.0	34.3	28.3	32.0	32.1
3	1	21	4.1	6.0	7.8	10.0	7.4	21.9	26.5
3	1	22	16.6	21.3	21.6	20.4	18.7	23.2	22.7
2	1	10	5.7	8.1	12.2	16.7	12.1	20.7	18.8
2	1	13	13.4	18.0	19.3	19.0	18.5	21.6	18.4
2	1	14	5.4	12.8	16.4	20.3	15.7	24.0	22.3
2	1	15	17.5	21.0	23.0	23.4	22.4	21.6	22.1
2	1	17	4.5	5.2	6.9	13.4	10.8	23.0	24.2
2	1	2A	14.5	24.6	29.2	32.7	24.7	30.4	29.9
2	1	2X	8.3	10.1	13.3	26.1	17.1	32.7	34.4
2	1	1X	10.0	12.9	19.0	27.1	20.3	26.8	25.9
4	1	2X	6.6	7.6	10.3	21.2	15.4	29.5	31.3
4	1	24	13.9	21.0	23.5	27.5	23.0	29.4	30.1
4	1	25	21.1	22.3	25.9	32.7	25.4	28.1	28.1
4	1	26	4.8	6.6	9.1	14.2	12.3	24.8	24.5
4	1	27	23.2	25.2	26.2	23.7	25.2	23.9	21.3
1	2	2	5.2	7.1	10.0	14.7	10.9	21.2	24.3
1	2	4	9.5	12.7	13.8	14.1	13.4	18.1	16.9
1	2	6	3.9	6.9	11.0	16.6	13.4	20.0	20.8
1	2	7	18.2	23.2	23.3	23.5	22.7	22.6	24.6
1	2	8	8.5	9.5	11.0	14.2	14.1	19.6	20.3
1	2	1A	5.3	6.8	10.7	17.0	12.8	21.7	20.1
1	2	2X	4.9	5.1	7.3	16.3	13.7	26.3	28.2
1	2	1X	11.9	14.5	21.1	27.0	22.2	28.5	29.5
3	2	1X	11.0	13.7	20.1	27.1	21.2	27.7	27.7
3	2	19	10.1	15.6	19.9	22.6	21.3	26.0	27.1
3	2	20	20.6	23.7	27.8	31.3	26.8	30.1	30.1
3	2	21	4.0	5.8	7.4	9.9	7.1	20.8	25.4
3	2	22	24.5	29.3	29.7	26.6	26.7	26.4	22.9
2	2	10	5.7	8.5	11.7	18.1	12.9	20.9	19.3
2	2	13	14.1	18.4	19.8	19.6	19.0	21.8	18.6
2	2	14	5.3	12.9	16.5	20.2	15.3	23.4	21.8
2	2	15	19.7	22.9	24.1	23.8	23.3	21.3	21.8
2	2	17	4.1	4.6	6.3	12.4	10.1	22.1	23.4
2	2	2A	14.5	24.6	29.2	32.7	24.7	30.4	29.9
2	2	2X	7.2	8.5	11.5	23.6	16.3	30.5	32.1
2	2	1X	10.0	12.9	19.0	26.5	20.2	26.9	26.5
4	2	2X	6.6	7.6	10.3	21.2	15.4	29.5	31.3
4	2	24	11.7	19.3	22.4	25.5	22.6	27.9	29.1
4	2	25	21.1	22.3	25.9	32.7	25.4	28.1	28.1
4	2	26	4.8	6.6	9.1	14.2	12.3	24.8	24.5
4	2	27	23.2	25.2	26.2	23.7	25.2	23.9	21.3

VOLUMETRIC SOIL MOISTURE FOR THE LINE SENSORS  
AUGUST 14, 1978

LOCATION			DEPTH INCREMENT (CM)						
LINE	RUN	FLD	(0-2)	(2-5)	(5-9)	(9-15)	(0-15)	(15-30)	(30-45)
1	2	2	3.6	5.2	9.8	14.5	9.6	22.5	24.5
1	2	4	20.5	21.4	21.5	20.5	20.6	20.2	17.6
1	2	6	19.2	19.7	17.7	16.7	18.4	18.3	19.7
1	2	7	7.6	14.0	18.5	20.2	17.7	21.0	22.8
1	2	8	4.9	6.5	8.3	11.9	10.6	18.0	19.3
1	2	1A	5.1	6.8	10.3	17.1	13.8	21.1	21.2
1	2	2X	4.9	5.1	7.5	17.2	14.0	26.2	28.1
1	2	1X	6.9	10.2	16.9	22.6	18.0	25.7	27.9
3	2	1X	7.3	10.3	16.9	23.0	17.8	25.5	26.2
3	2	19	12.9	17.3	21.2	24.4	21.5	27.2	27.9
3	2	20	12.1	18.7	22.4	28.7	22.4	29.1	28.2
3	2	21	5.1	5.5	7.2	11.8	7.2	22.2	27.5
3	2	22	19.4	22.4	22.4	22.6	22.0	23.6	20.7
2	2	10	3.9	5.9	12.4	19.0	11.4	20.7	18.8
2	2	13	8.1	10.9	12.8	13.1	12.4	15.7	15.3
2	2	14	4.0	9.1	14.1	18.3	14.2	23.9	21.9
2	2	15	10.9	15.8	21.7	22.7	20.3	21.8	23.7
2	2	17	3.9	4.6	7.0	12.6	9.2	22.0	23.7
2	2	2A	6.1	12.8	19.0	26.5	19.8	27.9	27.5
2	2	2X	6.0	8.2	11.8	25.0	15.7	32.3	34.2
2	2	1X	7.7	10.5	16.8	23.3	17.6	25.2	24.6
4	2	2X	5.5	6.6	9.7	21.1	14.9	29.3	31.2
4	2	24	18.8	24.6	28.0	30.5	28.5	32.7	32.3
4	2	25	27.4	26.6	30.8	35.5	29.7	28.0	29.3
4	2	26	4.5	6.3	8.4	12.5	9.2	22.0	23.4
4	2	27	8.9	16.2	16.1	16.3	15.3	18.2	17.3
1	3	2	3.6	5.2	9.8	14.5	9.6	22.5	24.5
1	3	4	20.5	21.4	21.5	20.5	20.6	20.2	17.6
1	3	6	20.1	20.1	18.3	16.7	19.6	18.7	19.8
1	3	7	7.7	14.3	18.8	20.4	18.0	21.5	22.6
1	3	8	4.9	6.5	8.3	11.9	10.6	18.0	19.3
1	3	1A	5.1	6.8	10.3	17.1	13.8	21.1	21.2
1	3	2X	4.9	5.1	7.5	17.2	14.0	26.2	28.1
1	3	1X	6.9	10.2	16.9	22.6	18.0	25.7	27.9
3	3	1X	8.6	12.2	20.0	25.9	21.7	28.0	28.8
3	3	19	12.9	17.3	21.2	24.4	21.5	27.2	27.9
3	3	20	12.1	18.7	22.4	28.7	22.4	29.1	28.2
3	3	21	5.1	5.5	7.2	11.8	7.2	22.2	27.5
3	3	22	19.4	22.4	22.4	22.6	22.0	23.6	20.7
2	3	10	3.9	5.9	12.4	19.0	11.4	20.7	18.8
2	3	13	8.1	10.9	12.8	13.1	12.4	15.7	15.3
2	3	14	4.0	9.1	14.1	17.9	14.1	22.8	21.2
2	3	15	9.5	14.4	19.4	20.2	18.4	20.3	22.0
2	3	17	3.9	4.6	7.0	12.6	9.2	22.0	23.7
2	3	2A	6.1	12.8	19.0	26.5	19.8	27.9	27.5
2	3	2X	6.0	8.2	11.8	25.0	15.7	32.3	34.2
2	3	1X	7.7	10.5	16.8	23.3	17.6	25.2	24.6
4	3	2X	5.5	6.6	9.7	21.1	14.9	29.3	31.2
4	3	24	18.8	24.6	28.0	30.5	28.5	32.7	32.3
4	3	25	27.4	26.6	30.8	35.5	29.7	28.0	29.3
4	3	26	4.5	6.4	8.4	12.3	9.4	21.0	22.3
4	3	27	12.1	20.3	20.2	19.7	18.1	23.3	21.0

VOLUMETRIC SOIL MOISTURE FOR THE LINE SENSORS  
AUGUST 17, 1978

LOCATION			DEPTH INCREMENT (CM)						
LINE	RUN	FLD	(0-2)	(2-5)	(5-9)	(9-15)	(0-15)	(15-30)	(30-45)
1	1	2	3.3	5.1	8.5	15.6	9.1	22.3	23.5
1	1	4	7.3	10.9	13.2	13.3	12.9	15.3	15.8
1	1	6	5.7	12.6	15.7	16.7	15.0	17.8	17.0
1	1	7	4.5	10.9	16.1	18.3	15.6	19.1	21.6
1	1	8	3.2	5.6	7.5	11.0	9.6	16.7	18.1
1	1	1A	4.5	5.7	8.6	15.8	12.9	20.3	20.7
1	1	2X	4.9	5.1	8.6	18.2	14.2	25.9	28.0
1	1	1X	5.6	8.0	12.9	19.2	16.1	22.2	26.2
3	1	1X	5.1	6.6	10.5	16.9	14.0	20.8	22.8
3	1	19	9.5	14.7	18.5	21.3	18.6	25.5	26.0
3	1	20	26.4	26.0	28.8	30.7	25.0	26.2	26.0
3	1	21	4.2	4.8	6.3	7.9	6.7	21.6	28.2
3	1	22	11.8	18.9	19.8	19.8	18.4	21.5	18.5
2	1	10	3.6	5.9	12.8	19.9	10.7	21.2	20.3
2	1	13	23.0	24.6	23.3	22.2	22.4	16.9	16.9
2	1	14	3.5	6.2	12.5	18.1	12.1	23.6	21.6
2	1	15	4.9	11.5	16.3	18.6	15.6	19.1	22.2
2	1	17	2.9	3.9	6.1	10.3	8.2	20.9	22.0
2	1	2A	5.4	10.1	18.0	24.9	17.4	27.0	26.6
2	1	2X	5.5	8.0	11.5	24.4	14.9	32.0	34.2
2	1	1X	6.4	8.3	14.5	21.2	17.4	24.5	24.2
4	1	2X	5.2	6.5	10.0	21.3	14.5	29.0	31.1
4	1	24	14.8	22.2	26.3	30.1	26.8	30.4	30.6
4	1	25	9.7	14.7	18.9	24.3	19.9	26.3	27.0
4	1	26	4.6	6.1	8.6	12.4	9.0	22.8	25.2
4	1	27	4.3	8.4	11.5	12.1	10.6	14.7	15.9
1	2	2	3.3	5.0	8.5	15.6	9.1	22.3	23.6
1	2	4	7.3	10.9	13.2	13.3	12.9	15.3	15.8
1	2	6	6.0	12.6	15.9	16.8	15.5	18.9	16.6
1	2	7	4.5	11.3	16.5	19.5	16.0	20.4	23.5
1	2	8	3.2	5.6	7.5	11.0	9.6	16.7	18.1
1	2	1A	4.5	5.7	8.6	15.8	12.9	20.3	20.7
1	2	2X	4.9	5.1	8.6	18.2	14.2	25.9	28.0
1	2	1X	5.6	8.0	12.9	19.2	16.1	22.2	26.2
3	2	1X	6.9	9.7	16.9	23.5	19.4	25.9	27.6
3	2	19	9.5	14.7	18.5	21.3	18.6	25.5	26.0
3	2	20	27.9	28.9	31.7	33.4	27.4	29.2	27.1
3	2	21	4.2	4.8	6.3	7.9	6.7	21.6	28.2
3	2	22	11.8	18.9	19.8	19.8	18.4	21.5	18.5
2	2	10	3.4	5.1	11.4	18.6	10.7	21.6	19.6
2	2	13	23.0	24.6	23.3	22.2	22.4	16.9	16.9
2	2	14	3.5	5.8	12.2	17.9	12.0	23.8	21.3
2	2	15	4.9	11.5	16.3	18.6	15.6	19.1	22.2
2	2	17	3.5	4.2	6.5	11.8	9.0	21.0	23.3
2	2	2A	5.4	10.1	18.0	24.9	17.4	27.0	26.6
2	2	2X	5.5	8.0	11.5	24.4	14.9	32.0	34.2
2	2	1X	6.4	8.3	14.5	21.2	17.4	24.5	24.2
4	2	2X	5.2	6.5	10.0	21.3	14.5	29.0	31.1
4	2	24	13.1	19.7	24.0	27.8	24.7	29.7	30.5
4	2	25	10.6	17.5	21.5	27.2	21.0	26.6	26.3
4	2	26	4.5	6.0	8.2	11.9	8.6	21.3	23.4
4	2	27	5.5	10.8	13.8	14.8	12.5	18.4	18.4

*The REMOTE SENSING CENTER was established by authority of the Board of Directors of the Texas A&M University System on February 27, 1968. The CENTER is a consortium of four colleges of the University; Agriculture, Engineering, Geosciences, and Science. This unique organization concentrates on the development and utilization of remote sensing techniques and technology for a broad range of applications to the betterment of mankind.*



